

Troubleshooting Guide

- mechanical -

Xperia Z1™

C6902, C6903, C6906, LT39h

1277-9814 Rev 2



CONTENTS





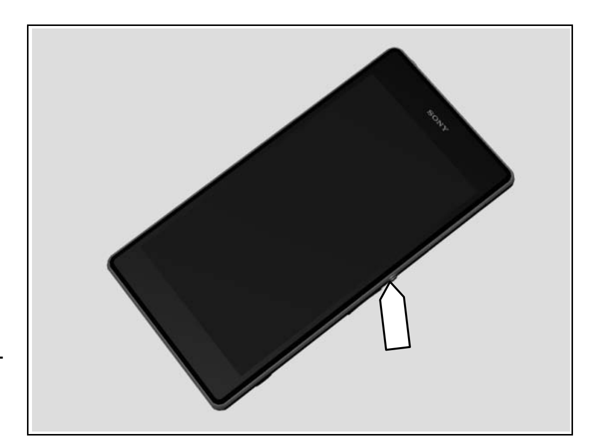
Always firstly disconnect the Battery BtB connector to cut off power supply when the Rear Cover Assy is disassembled.

Always finally connect the Battery BtB connector before the Rear Cover Assy is reassembled.

1 Problem Areas

1.1 Power

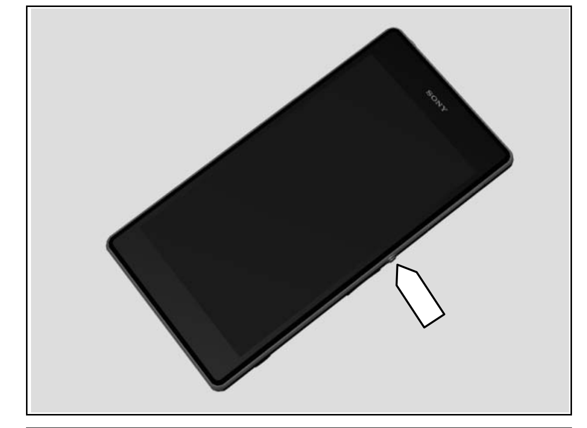
1.1.1 Will not power on or will switch off randomly



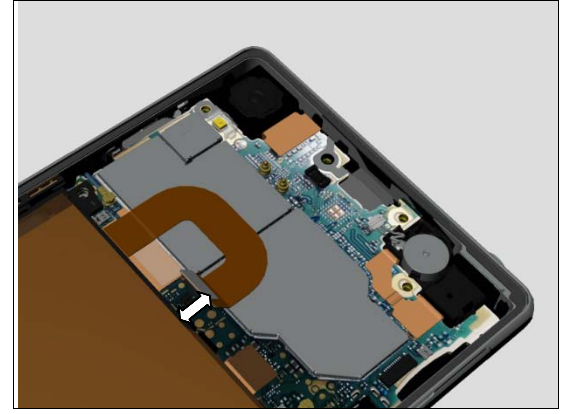
Check:
Check whether the phone vibrates by pressing the on/off key.
Action:
1. If activation of the vibrator is detected, refer to section 1.4 'Display'.



2. If NO activation of the Vibrator is detected, check that the battery is charging when connected to a charger.
Follow 1277-9815 Test Instruction - mechanical chapter 2.3.7 (Charging via USB and Easy Charger), Diagnostic Battery / Charging status.



Check:
Inspect the on/off key.
Action:
Refer to section 1.2.3 'On/Off Key'.

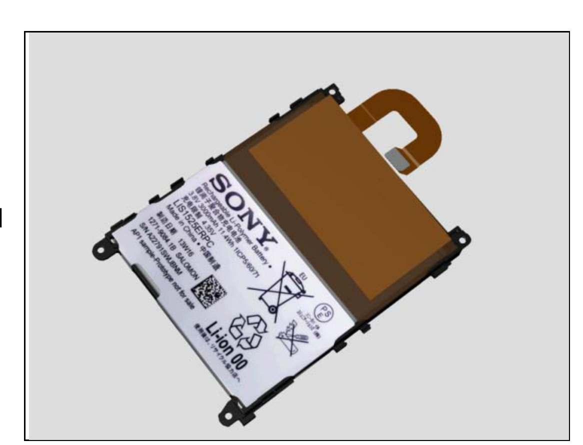


Check:
Inspect the BtB connector of the Battery to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean the both sides of the BtB connector.



Problem Areas: Power

3. If the BtB connector, the Battery FPC or the Battery is damaged – replace the Battery.
4. Replace Main PBA.





Problem Areas

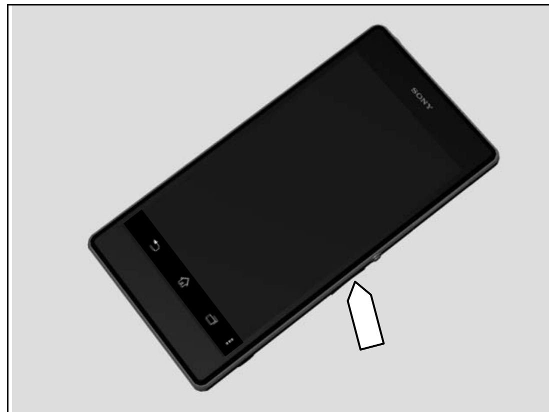
1.2 Keys



1.2.1 Back, Menu, Home and Multitask Keys

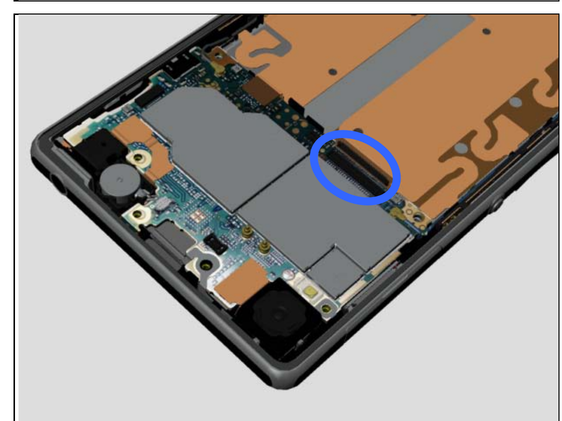
Action:

1. Refer to section 1.3 'Touch Screen'.
2. Replace Main PBA.



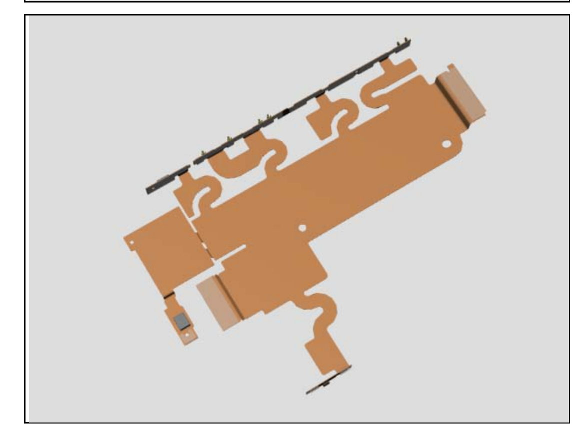
1.2.2 Volume Key

Check:
Inspect the external area of the Key Volume.
Action:
If dirty – clean it.



Check:
Inspect the BtB connector of FPC Assembly Relay to Main PBA.
Action:

1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.

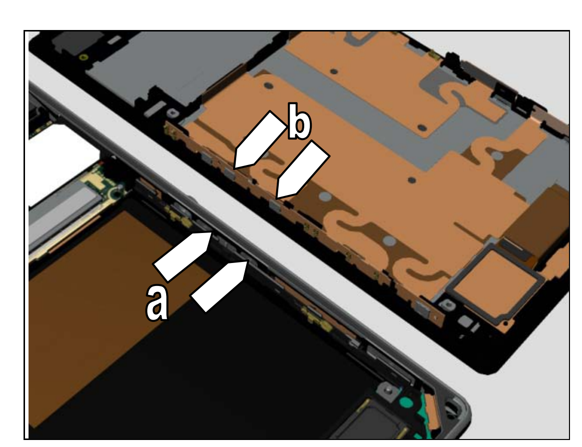


3. If the FPC of FPC Assembly Relay is damaged – replace the FPC Assembly Relay.
4. Replace Main PBA.

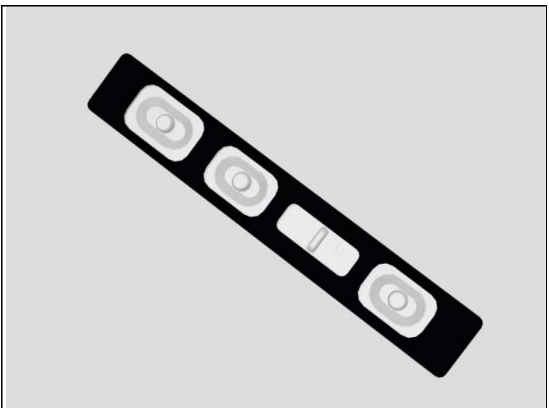




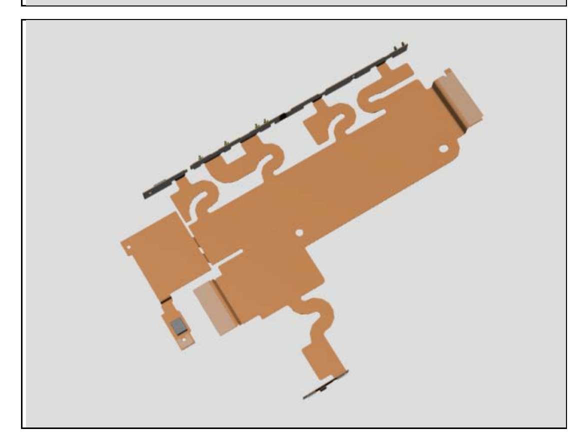
Problem Areas: Keys



Check:
Inspect the rubber of the Volume Key (a) and Volume Key switch (b).
Action:
1. If dirty – clean them.

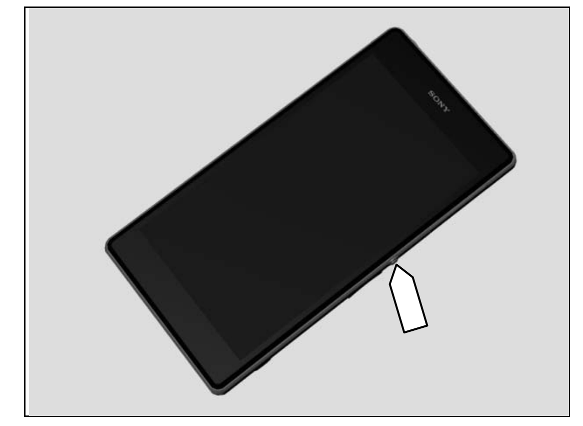


2. If the rubber of the Volume Key is damaged – replace the Gasket Side Key.



3. If the volume key switch is damaged – replace the FPC Assembly Relay.

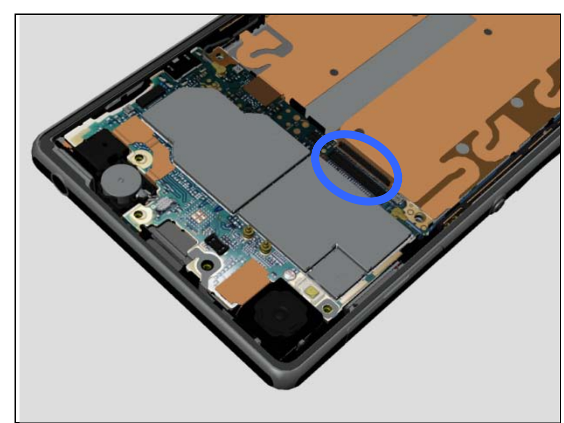
1.2.3 On/Off Key



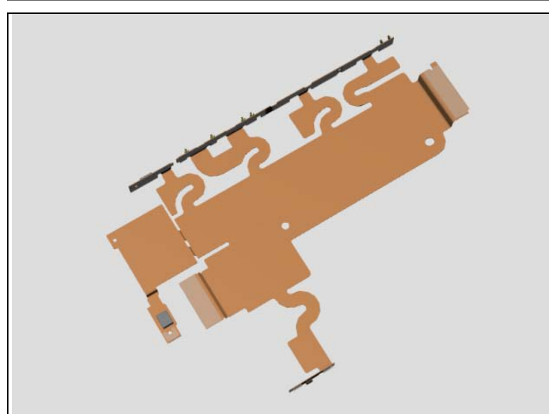
Check:
Inspect the external area of the Power Key.
Action:
If dirty – clean it.



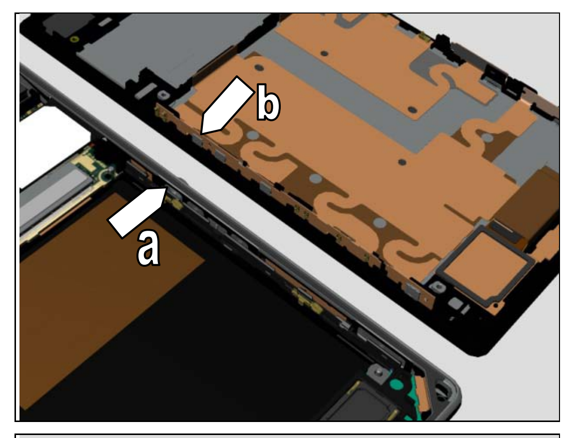
Problem Areas: Keys



Check:
Inspect the BtB connector of FPC Assembly Relay to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



3. If the FPC of FPC Assembly Relay is damaged – replace the FPC Assembly Relay.
4. Replace Main PBA.



Check:
Inspect the rubber of the Power Key (a) and Power Key switch (b).
Action:
1. If dirty – clean them.

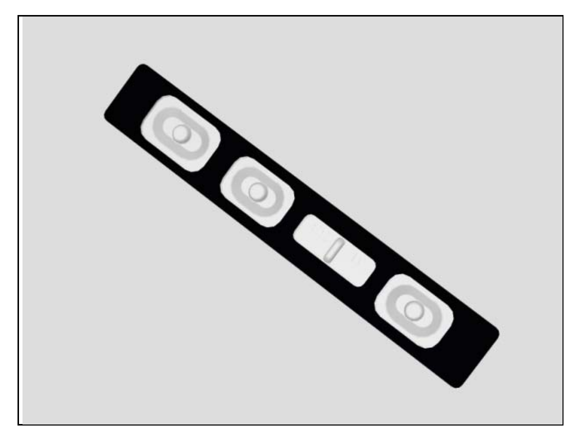


2. If the Power key is damaged – replace the Power Key.

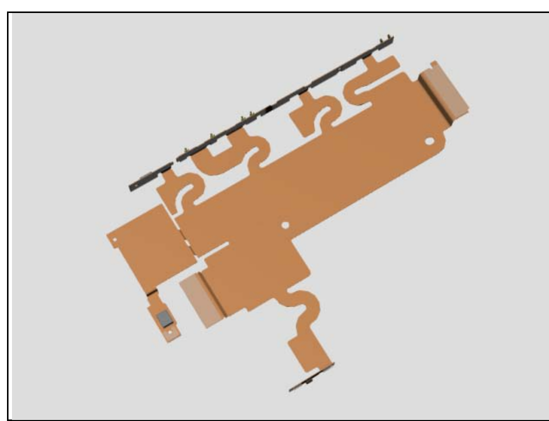




Problem Areas: Keys



3. If the rubber of the power key is damaged – replace the Gasket Side Key.



4. If the power key switch is damaged – replace the FPC Assembly Relay.



1.2.4 Camera Key

Check:
Inspect the external area of the Camera Key.
Action:
If dirty – clean it.

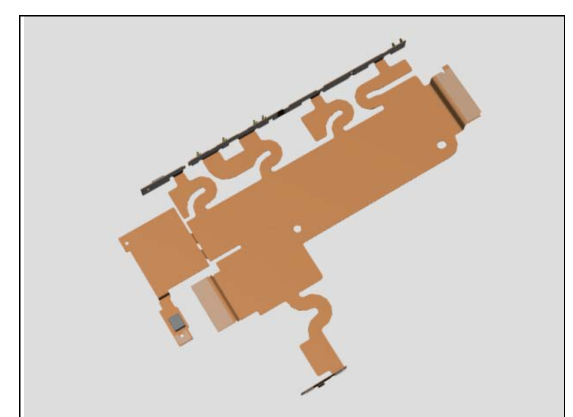


Check:
Inspect the BtB connector of FPC Assembly Relay to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.

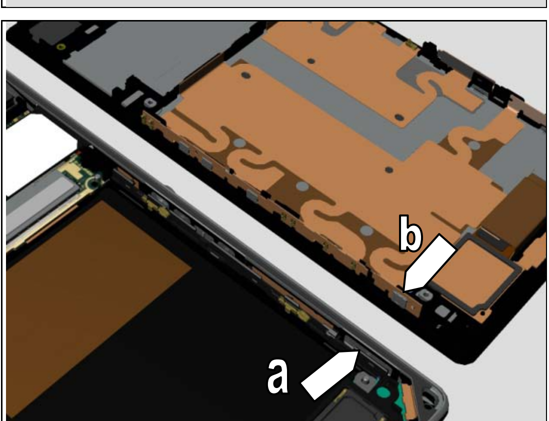


Problem Areas: Keys

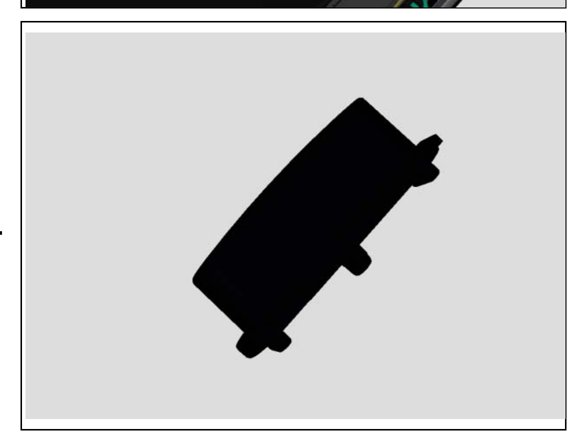
3. If the FPC of FPC Assembly Relay is damaged – replace the FPC Assembly Relay.
4. Replace Main PBA.



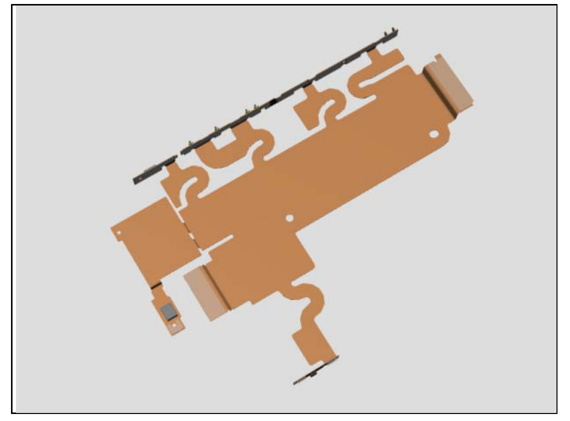
Check:
Inspect the rubber of the Camera Key (a) and Camera Key switch (b).
Action:
1. If dirty – clean them.



2. If the Camera Key is damaged – replace the Camera Key.



3. If the camera key switch is damaged – replace the FPC Assembly Relay.







Problem Areas

1.3 Touch Screen

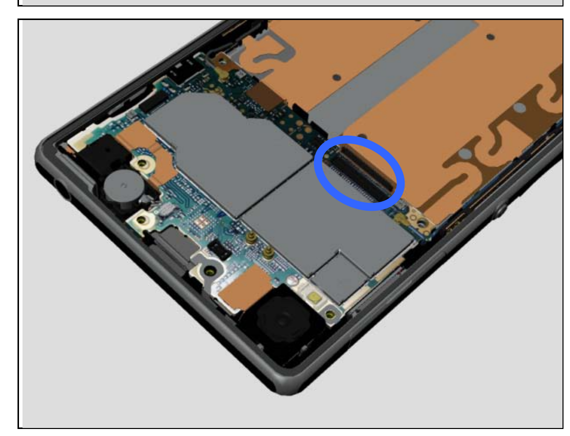


1.3.1 Touch Screen malfunction

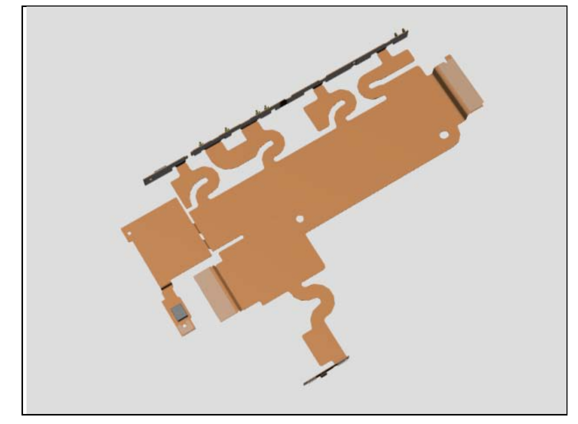
Check:
Inspect the touch screen of the Front Cover.
Action:
1. If dirty – clean it.



2. If scratched or damaged – replace the Front Cover.

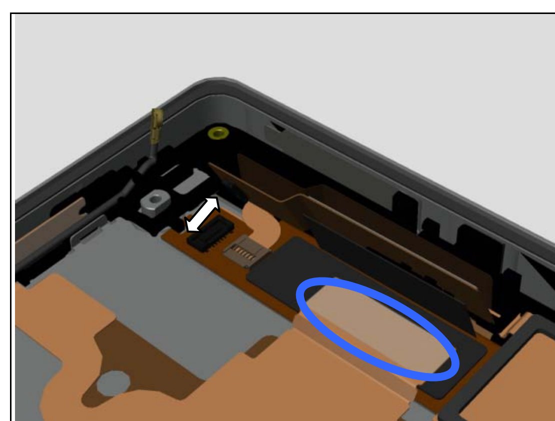


Check:
Inspect the BtB connector of FPC Assembly Relay to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



3. If the BtB connector of FPC Assembly Relay or FPC is damaged – replace the FPC Assembly Relay.
4. Replace Main PBA.

Problem Areas: Touch Screen



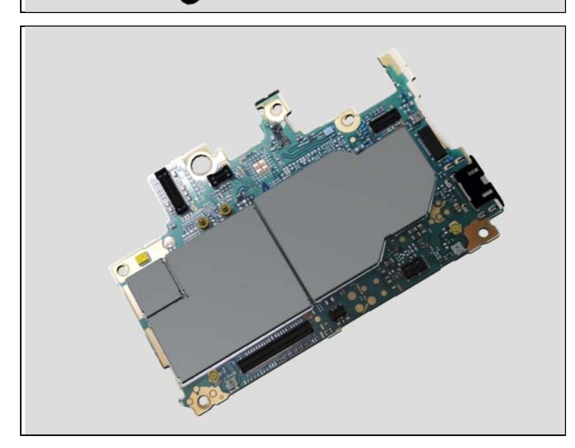
Check:
Inspect the BtB connector of FPC Assembly Relay to Front Cover and the BtB connector of Front Cover.

Action:

1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



3. Replace Front Cover.



4. Replace Main PBA.

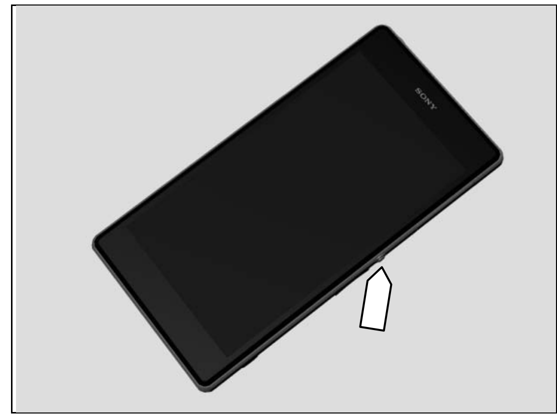




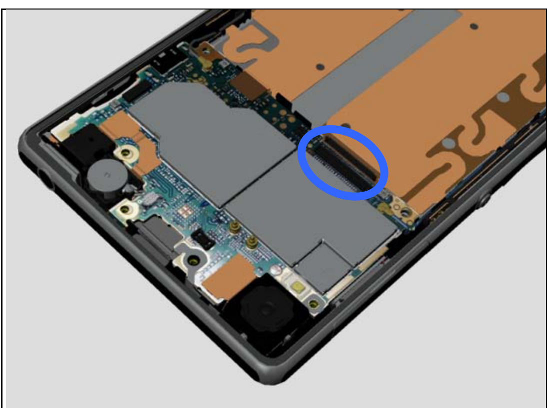
Problem Areas

1.4 Display

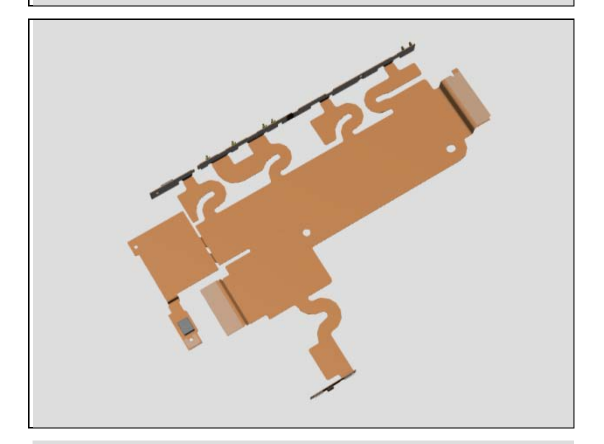
1.4.1 Graphics & Illumination



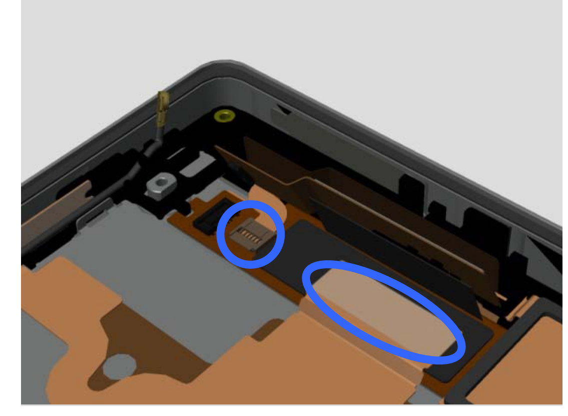
Check:
Check whether the phone vibrates after the on/off key has been pressed.
Action:
If the activation described above is not detected, refer to section 1.1 ‘Power’.



Check:
Inspect the BtB connector of FPC Assembly Relay to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.

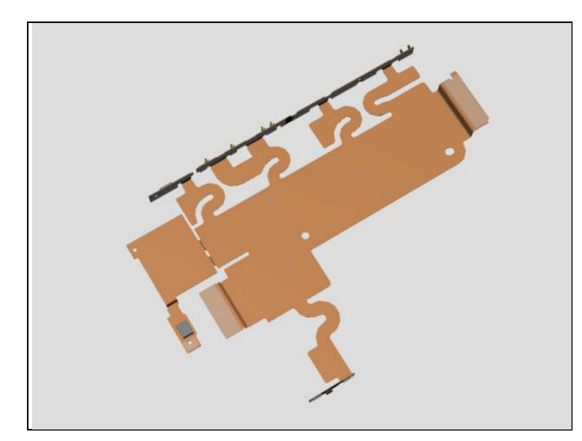


3. If the BtB connector of FPC Assembly Relay or FPC is damaged – replace the FPC Assembly Relay.

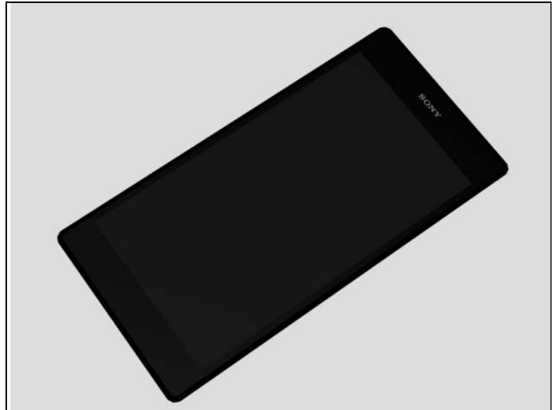


Check:
Inspect the BtB connector of FPC Assembly Relay to Front Cover and the BtB and ZIF connector of Front Cover.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.

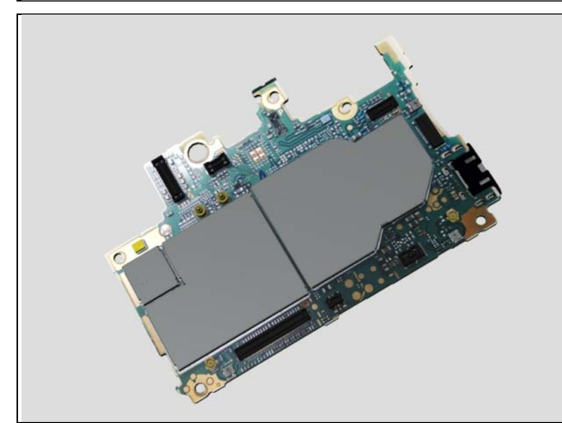
Problem Areas: Display



3. If the BtB connector of FPC Assembly Relay or FPC is damaged – replace the FPC Assembly Relay.



Check:
Replace the Main PBA with a known working one and test the Display.
Action:
1. If the display is still not working – Replace the Front Cover.



2. Replace Main PBA.



1.5 LED/Illumination

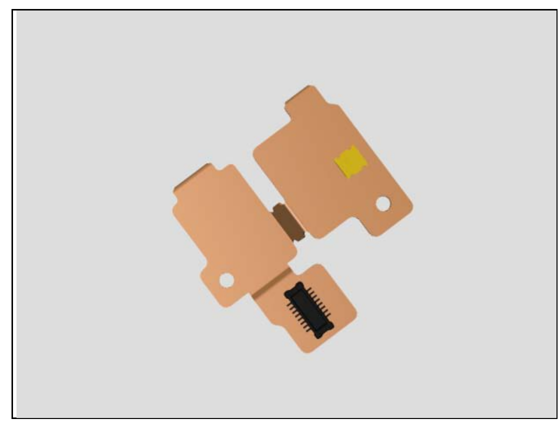


1.5.1 LED/Illumination

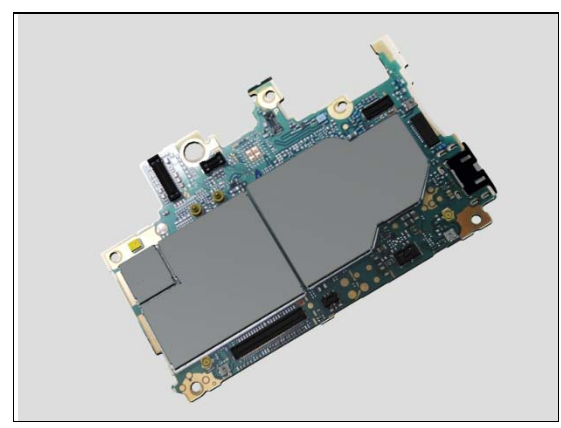
Check:
Inspect external port of LED on the Front Cover.
Action:
1. If dirty – clean it.



Check:
Inspect the BtB connector of FPC Assembly Mic to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



3. If the BtB connector of FPC Assembly Mic or FPC is damaged – replace the FPC Assembly Mic.

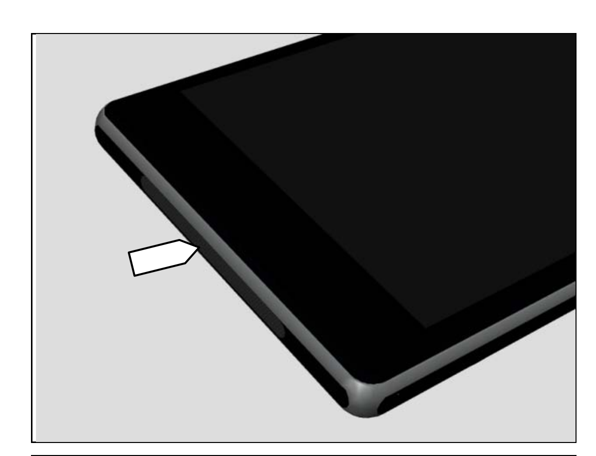


4. Replace Main PBA.



Problem Areas

1.6 Speaker



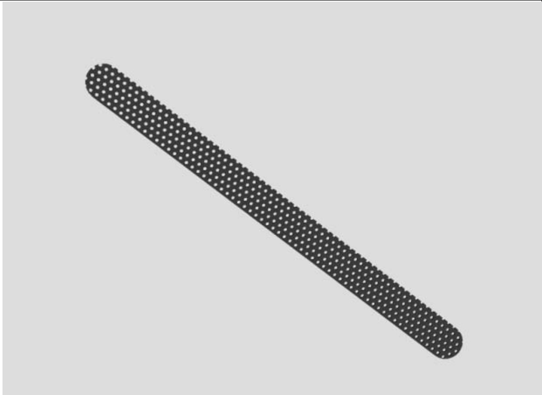
1.6.1 Loudspeaker

Check:

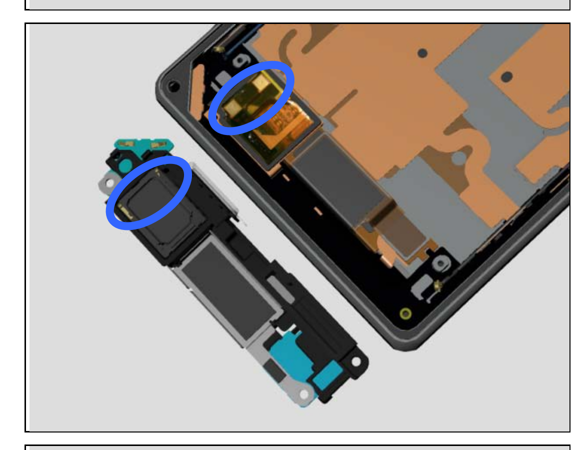
Inspect the Speaker Panel on the Main frame Assy.

Action:

1. If the Speaker Panel is clogged – clean it.



2. If the Speaker Panel is damaged – replace the Speaker Panel.

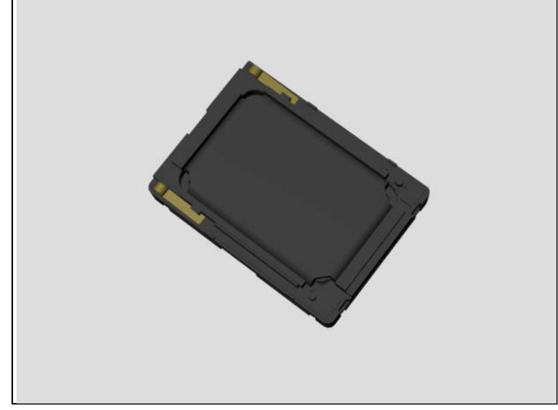


Check:

Inspect the contact pads of Loudspeaker and the contact pads on the FPC Assembly Relay.

Action:

1. If dirty – clean them.

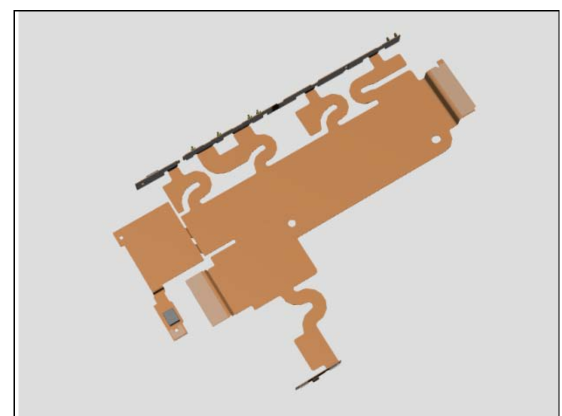


2. If the contact pads of Loudspeaker or the Loudspeaker are damaged – replace the Loudspeaker.

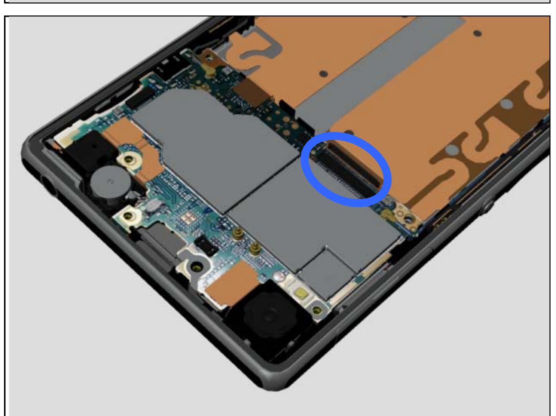




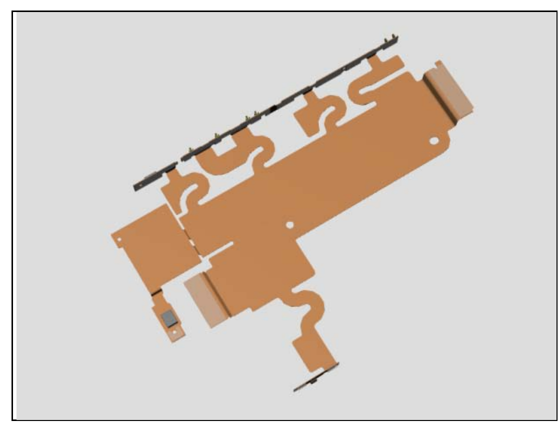
Problem Areas: Speaker



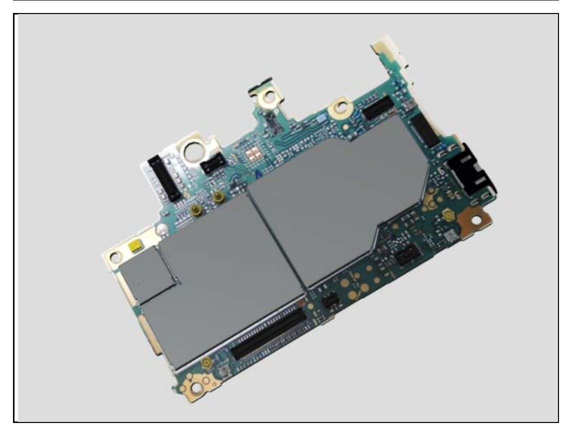
3. If the contact pads of FPC Assembly Relay are damaged - replace the FPC Assembly Relay.



Check:
Inspect the BtB connector of FPC Assembly Relay to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



3. If the BtB connector of FPC Assembly Relay or FPC is damaged – replace the FPC Assembly Relay.



4. Replace Main PBA.





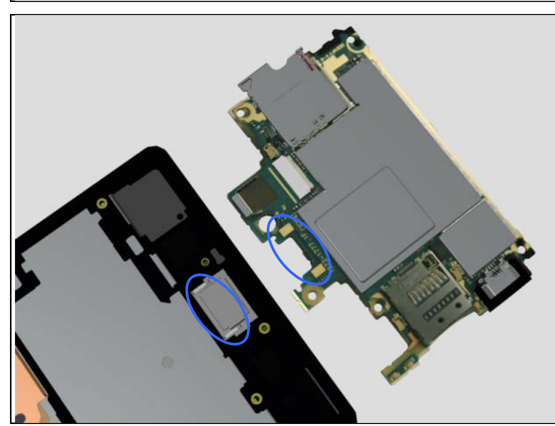
Problem Areas

1.7 Earphone

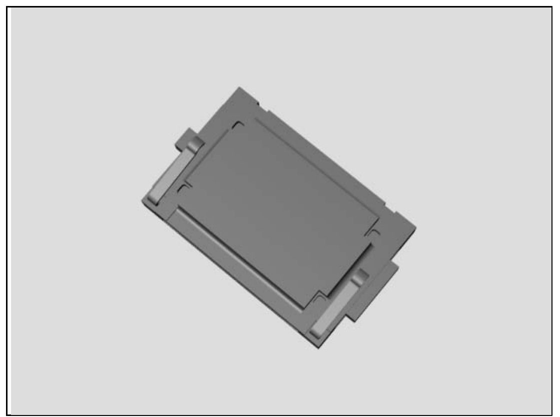


1.7.1 Ear Speaker

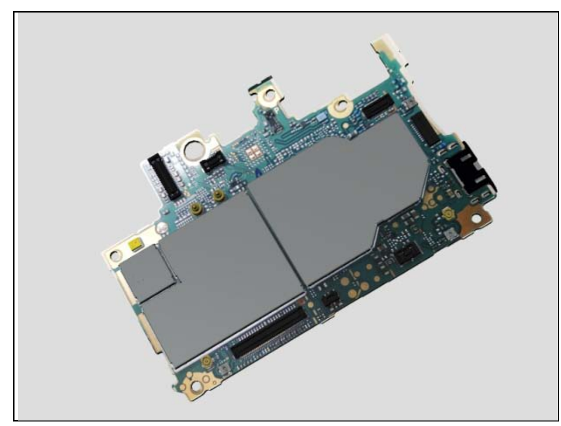
Check:
Inspect the external port of Ear Speaker on the Front Cover .
Action:
1. If clogged – clean it.



Check:
Inspect the contact pads of Ear Speaker and the contact pads on the Main PBA.
Action:
1. If dirty – clean them.



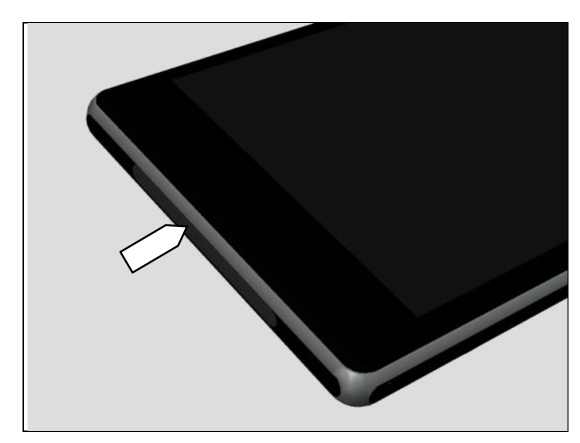
2. If the contact pads of the Ear Speaker or the Ear Speaker are damaged – replace the Ear Speaker.



3. Replace Main PBA.

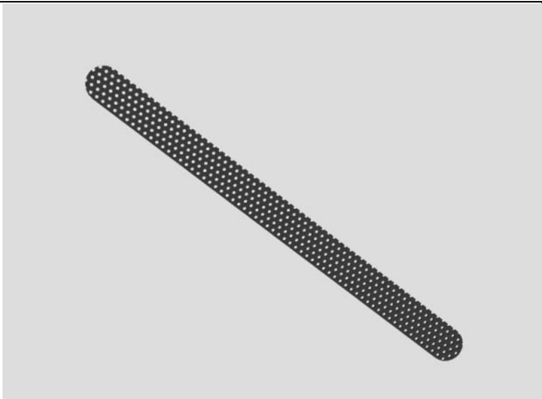


1.8 Microphone

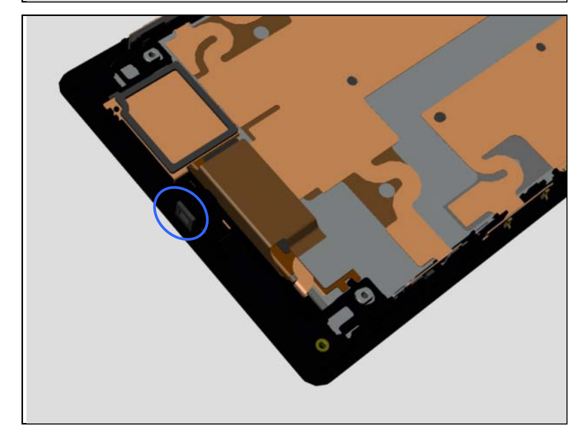


1.8.1 Primary Microphone

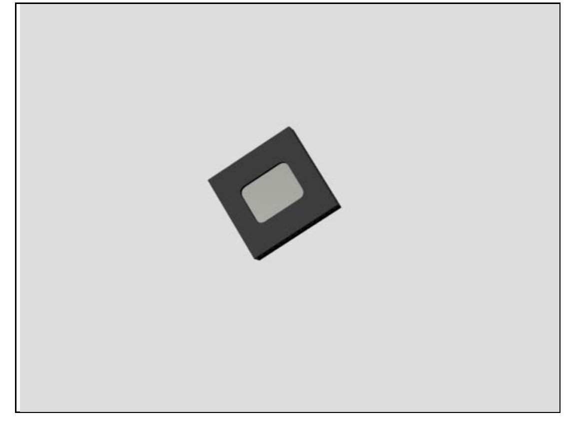
Check:
Inspect the Speaker Panel on the Front Cover .
Action:
1. If clogged – clean it.



2. If the Speaker Panel is damaged – replace the Speaker Panel.



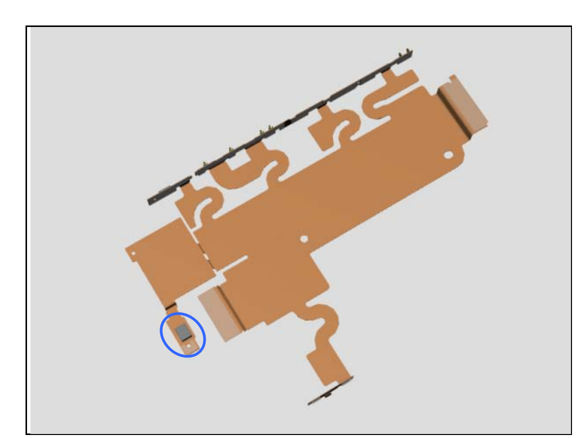
Check:
Inspect the Cushion 1st Mic on Front Cover .
Action:
1. If dirty – clean them.



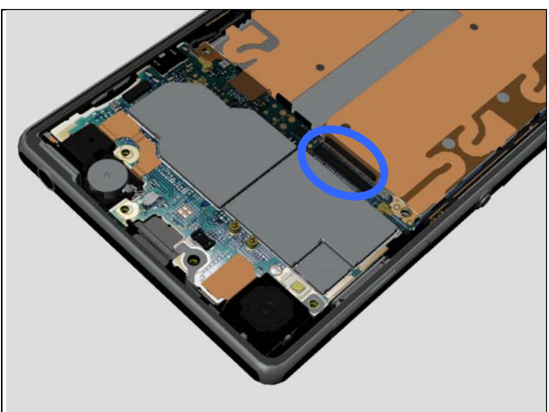
2. If the Cushion 1st Mic is damaged – replace Cushion 1st Mic.



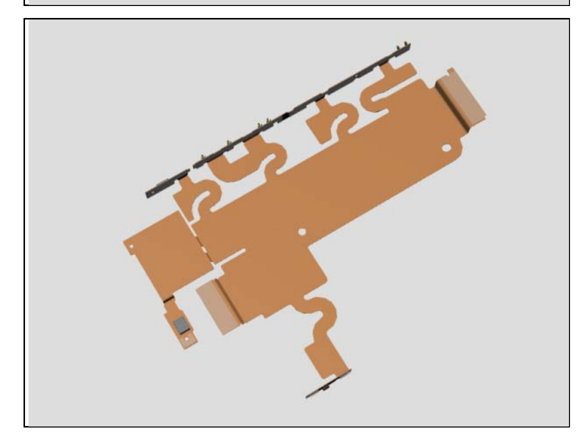
Problem Areas: Microphone



Check:
Inspect the microphone on the FPC Assembly Relay.
Action:
1. If clogged – clean it.
2. If the microphone is damaged – replace the FPC Assembly Relay.



Check:
Inspect the BtB connector of FPC Assembly Relay to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



3. If the BtB connector of FPC Assembly Relay or FPC is damaged – replace the FPC Assembly Relay.
4. Replace Main PBA.

1.8.2 Secondary Microphone

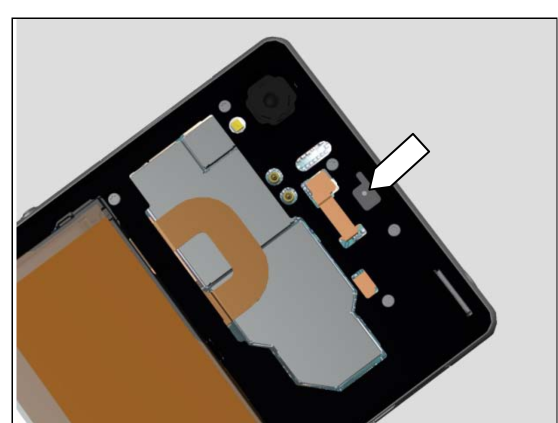


Check:
Inspect the external port of secondary microphone on the Rear Cover Assy.
Action:
1. If clogged – clean it.

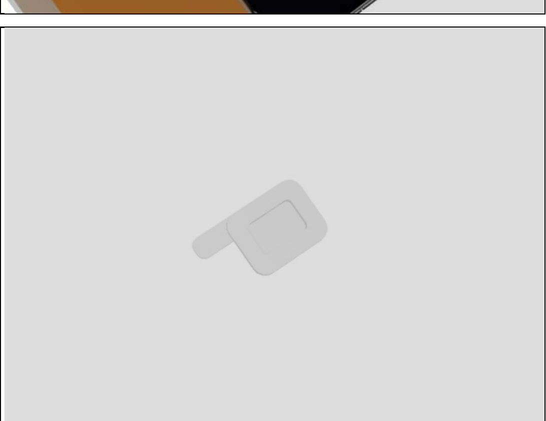


Problem Areas: Microphone

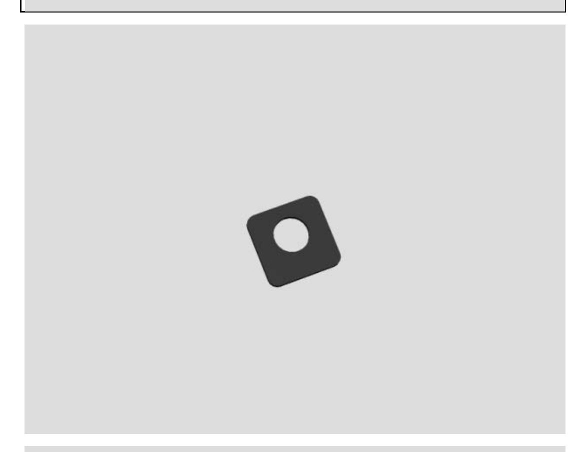
Check:
Inspect the Sheet WP 2nd Mic and the Cushion 2nd Mic on the Rear Cover Assy.
Action:
1. If dirty – clean them.



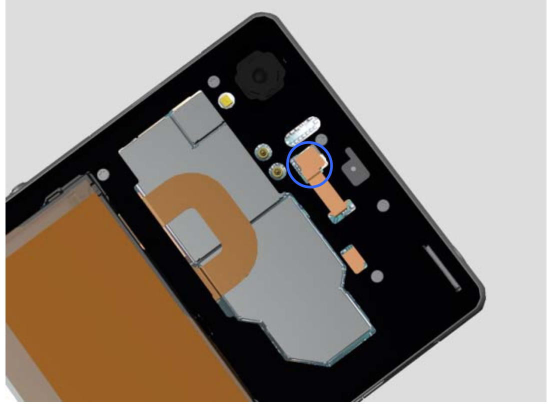
2. If the Sheet WP 2nd Mic is damaged – replace it.



3. If the Cushion 2nd Mic is damaged – replace it.

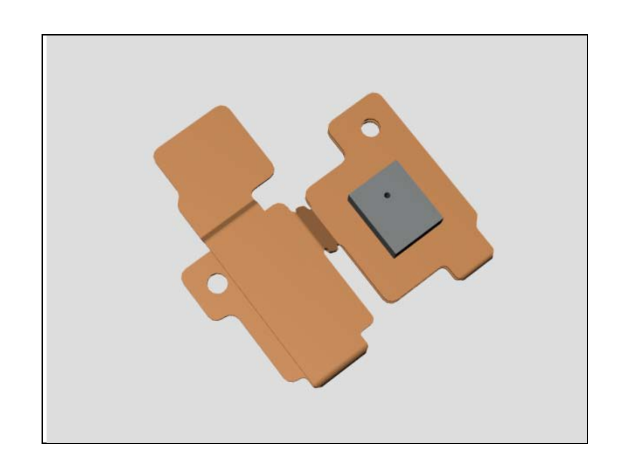


Check:
Inspect the BtB connector of FPC Assembly Mic to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.





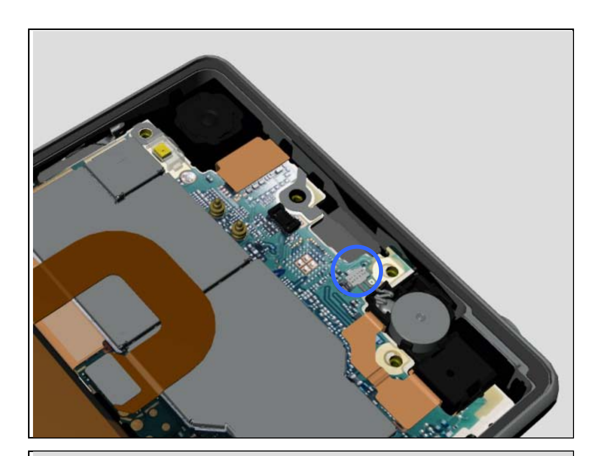
Problem Areas: Microphone



3. 3. If the BtB connector of FPC Assembly Mic or FPC is damaged – replace the FPC Assembly Mic.
4. Replace Main PBA.



1.9 Vibrator



1.9.1 Vibrator not generating alerts

Check:

Inspect the BtB connector of Vibrator to Main PBA.

Action:

1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.

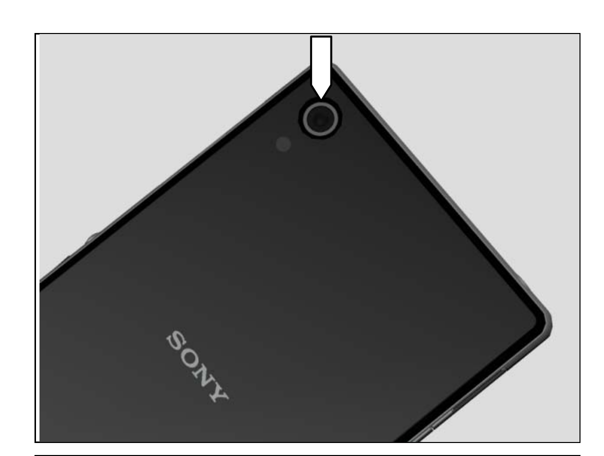


3. If the vibrator is damaged – replace the Vibrator.



Problem Areas

1.10 Camera

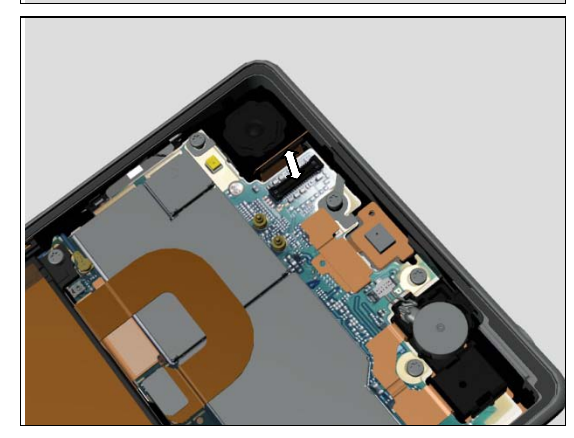


1.10.1 Main Camera

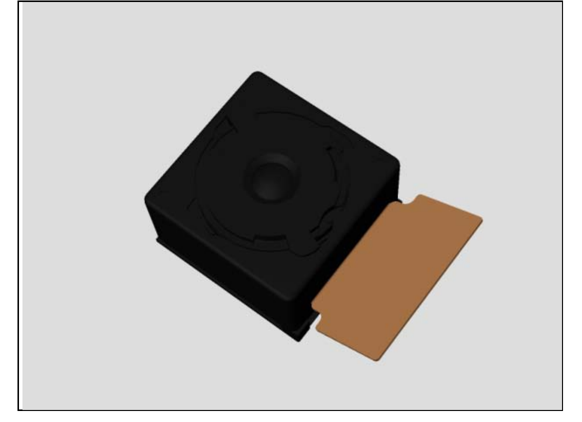
Check:
Inspect the external area of camera window.
Action:
1. If dirty – clean it.



2. If scratched or damaged – replace the Window Back.



Check:
Inspect the BtB connector of Camera to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



3. If the BtB connector or the Camera is damaged – replace the Camera.
4. Replace Main PBA.



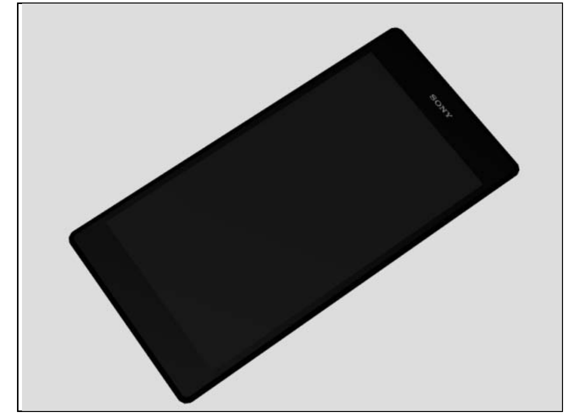


Problem Areas: Camera

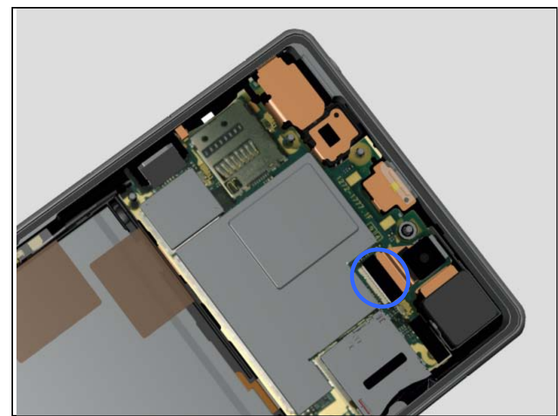


1.10.2 Video Call Camera defects

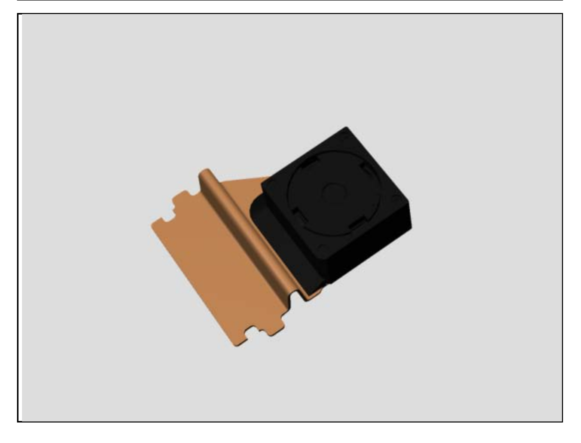
Check:
Inspect the external area of the video camera window.
Action:
1. If dirty – clean it.



2. If scratched or damaged – replace the Front Cover.



Check:
Inspect the ZIF connector of Chat Camera to the Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean the both sides of the ZIF connector.

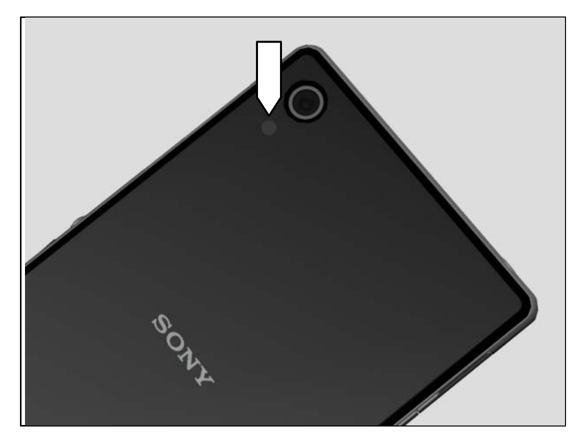


3. If the ZIF connector or the Chat Camera is damaged – replace the Chat Camera.
4. Replace Main PBA.



Problem Areas

1.11 Flash LED

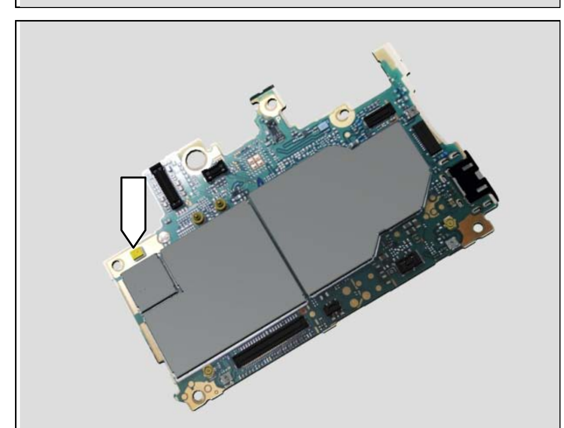


1.11.1 Flash LED not flashing

Check:
Inspect the external area of the flash LED window.
Action:
1. If dirty – clean it.



2. If scratched or damaged – replace the Window back.



Check:
Inspect the flash LED on the Main PBA.
Action:
1. If dirty – clean it.
2. Replace Main PBA.



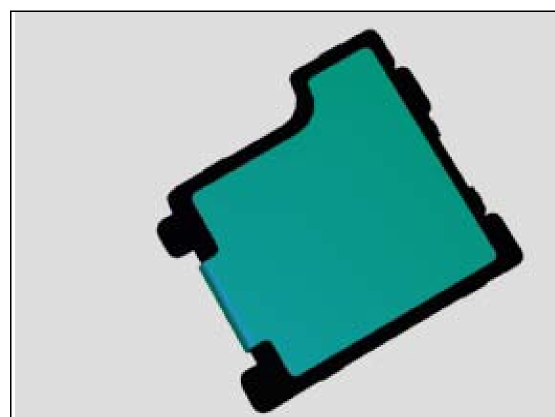
Problem Areas

1.12 Bluetooth and WLAN

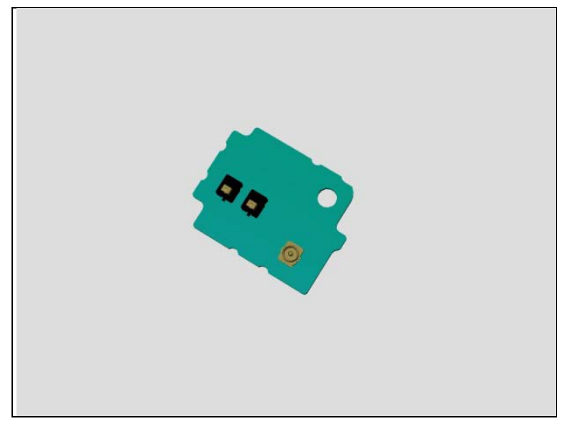


1.12.1 Bluetooth or WLAN connection failure

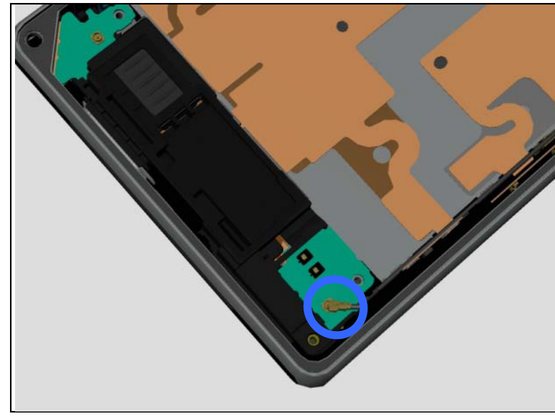
Check:
Inspect the BT + WLAN Flex Antenna contact pads on Rear Cover Assy and the contact pins on PBA WLAN Sub.
Action:
1. If dirty or oxidized – clean the pads and pins.



2. If the antenna is damaged – replace the BT + WLAN Flex Antenna.



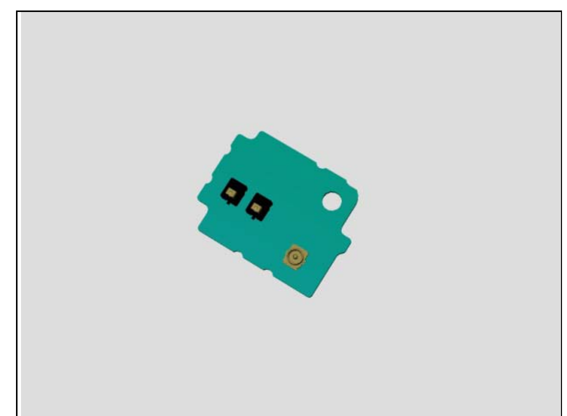
3. If the contact pins on PBA WLAN Sub is damaged – replace the PBA WLAN Sub.



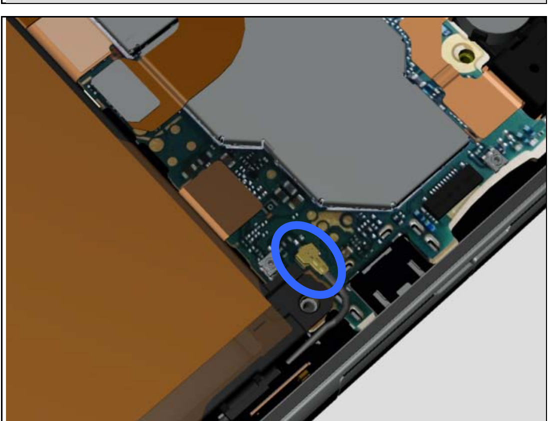
Check:
Inspect the RF connector of RF Cable A to the PBA WLAN Sub.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



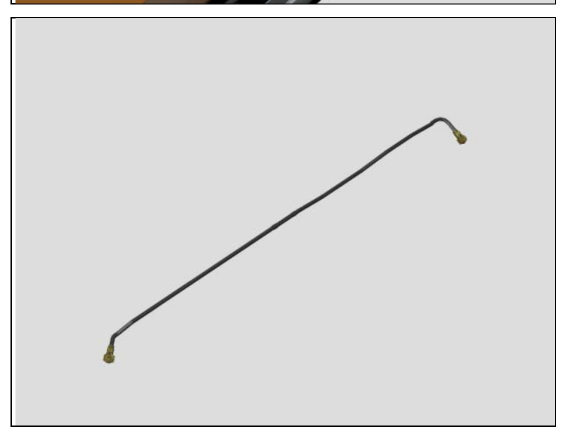
Problem Areas: Bluetooth and WLAN



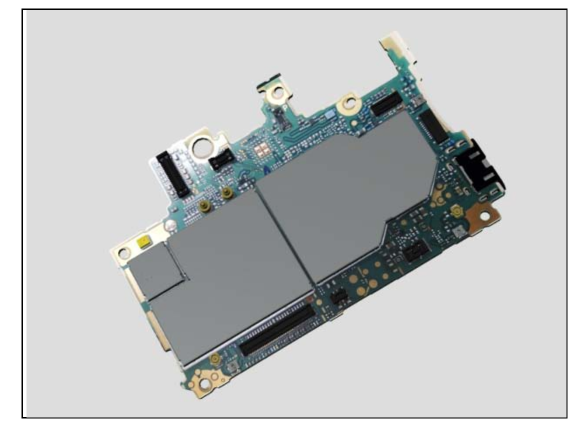
3. If the connector is damaged – replace the PBA WLAN Sub.



Check:
Inspect the RF connector of RF Cable A to the Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



3. If the connectors of RF Cable A are damaged – replace the RF Cable A.



4. Replace the Main PBA.





Problem Areas

1.13 NFC

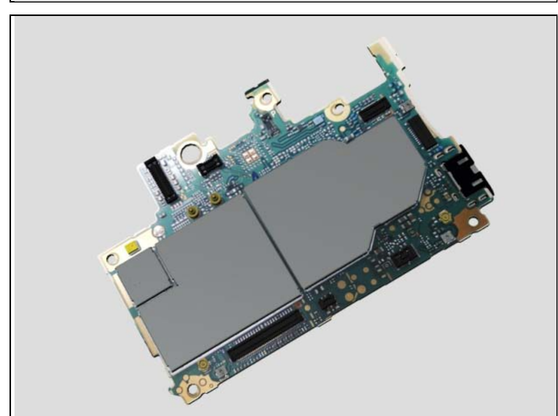


1.13.1 NFC malfunctions

Check:
Inspect the NFC antenna contact pads on Window Back and the contact pins on Main PBA.
Action:
1. If dirty or oxidized – clean the pads and pins.



2. If the NFC antenna contact pads are damaged – replace the Window Back.



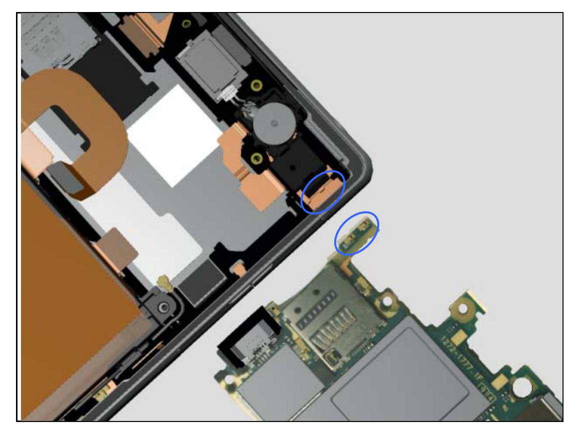
3. Replace the Main PBA.





Problem Areas

1.14 GPS

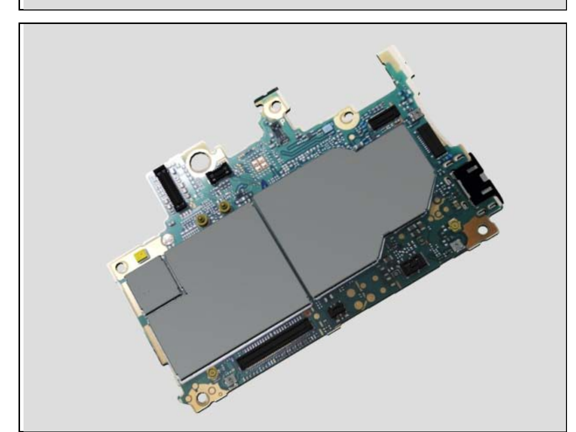


1.14.1 GPS malfunctions

Check:
Inspect the antenna on Main Frame Assy and the contact pins on Main PBA.
Action:
1. If dirty or oxidized – clean the pads and pins.



Check:
Replace the Main PBA with a known working one and test the GPS.
Action:
1. If the GPS is still not working – Replace the Main Frame Assy.



2. Replace the Main PBA.



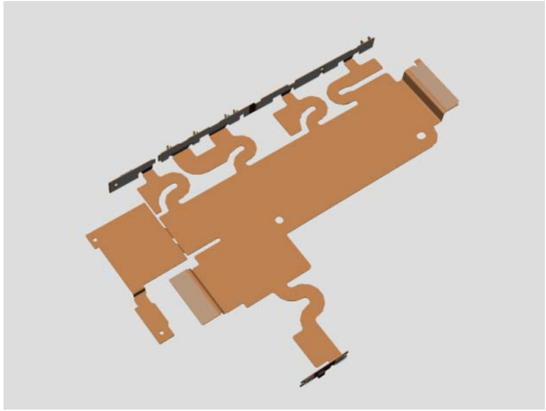


1.15 Compass

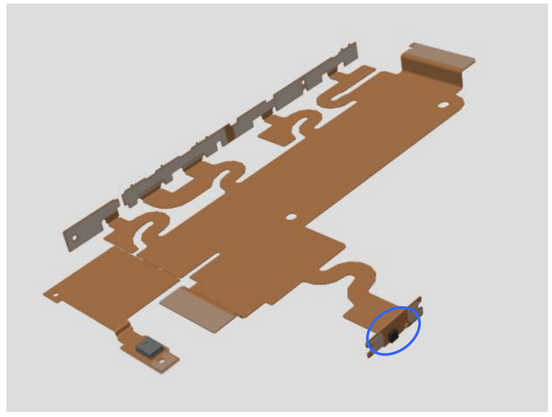
1.15.1 Compass fails



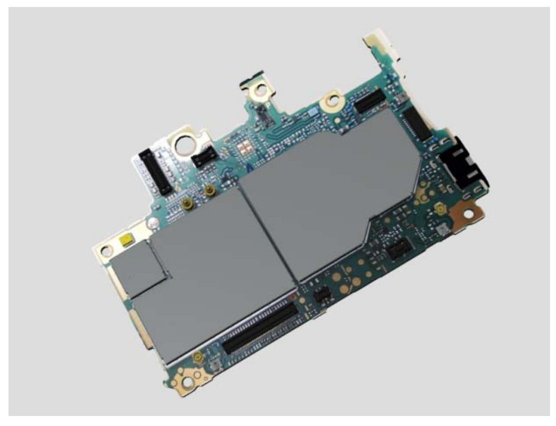
Check:
Inspect the BtB connector of FPC Assembly Relay to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



3. If the BtB connector or FPC is damaged – replace FPC Assembly Relay to Main PBA.



Check:
Inspect the compass chip on the FPC Assembly relay.
Action:
1. If the compass chip is damaged – replace the FPC Assembly relay.



2. Replace Main PBA.





1.16 Accelerometer

1.16.1 Accelerometer test fails

Action:
Replace Main PBA.





1.17 Gyroscope

1.17.1 Gyroscope test fails

Action:
Replace Main PBA.

Problem Areas

1.18 Ambient Light Sensor

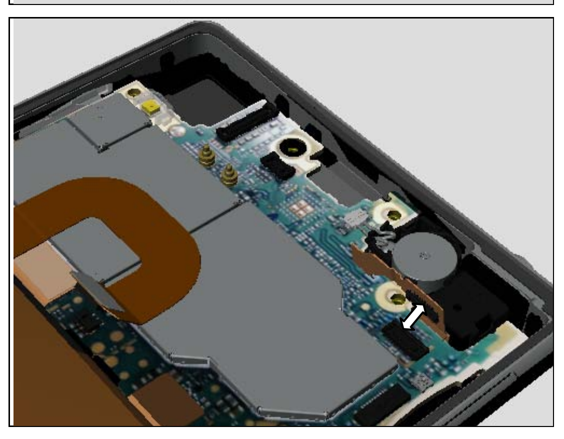
1.18.1 Light Sensor malfunctions



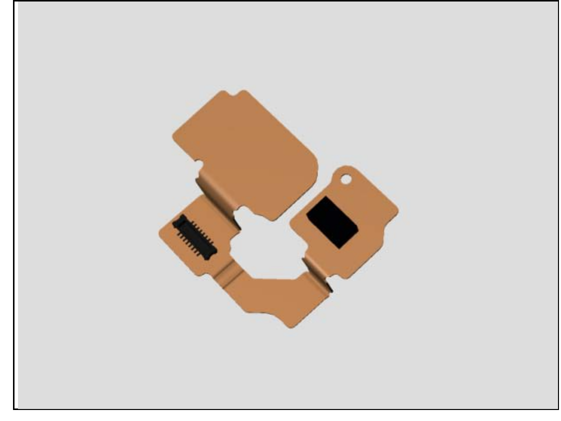
Check:
Inspect the external window area of light sensor on the Front Cover.
Action:
1. If dirty – clean it.



2. If scratched or damaged – replace the Front Cover.



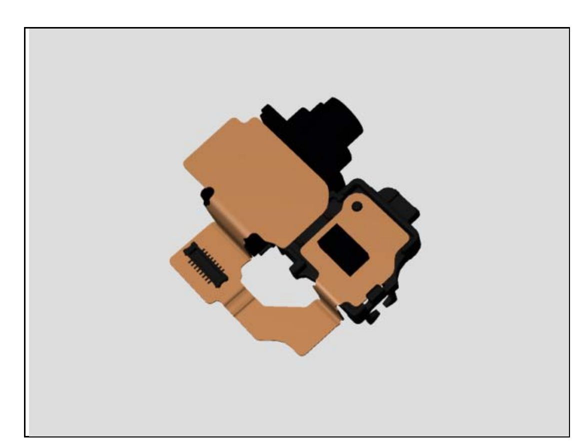
Check:
Inspect the BtB connector of FPC Assembly Audio Jack to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



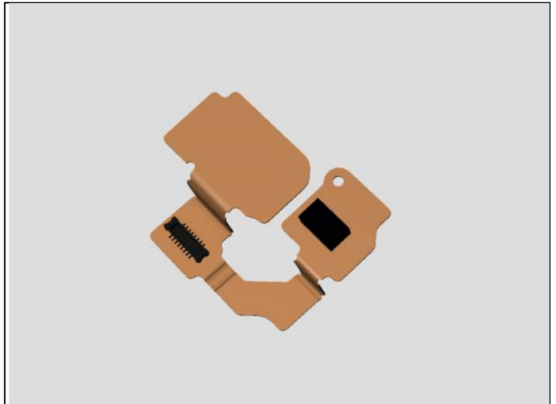
3. If the BtB connector or FPC of FPC Assembly Audio Jack is damaged – replace the FPC Assembly Audio Jack.



Problem Areas: Ambient Light Sensor



Check:
Inspect the sensor on the FPC Assembly Audio Jack.
Action:
1. If dirty or clogged – clean it.



2. If damaged – replace the FPC Assembly Audio Jack.
3. Replace Main PBA.

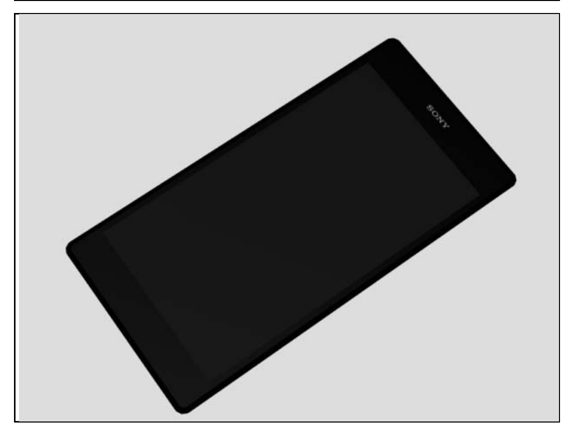


1.19 Proximity Switch

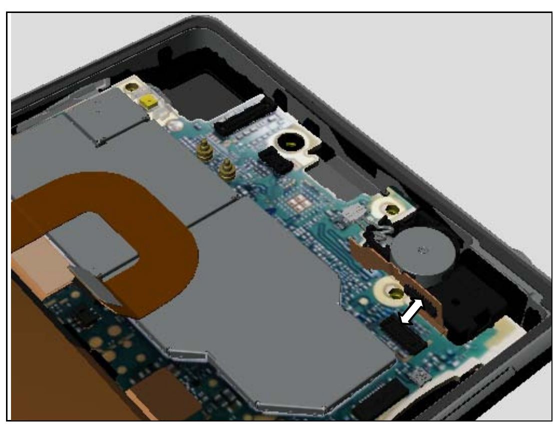


1.19.1 Proximity switch malfunctions

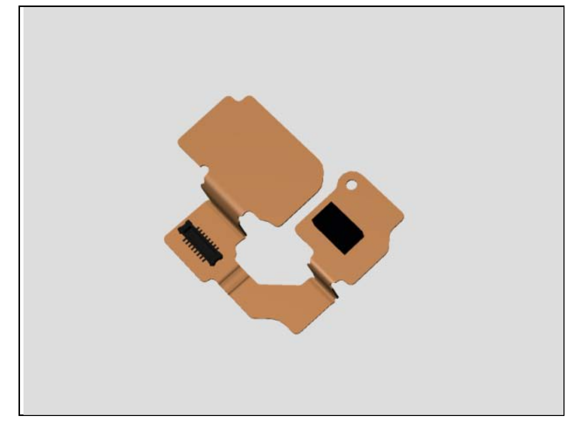
Check:
Inspect the external window area of light sensor on the Front Cover.
Action:
1. If dirty – clean it.



2. If scratched or damaged – replace the Front Cover.



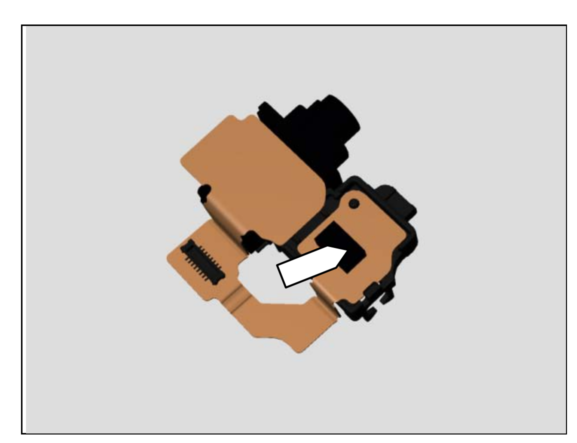
Check:
Inspect the BtB connector of FPC Assembly Audio Jack to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



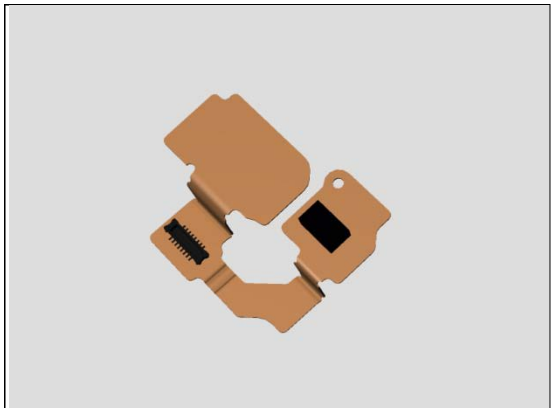
3. If the BtB connector or FPC of FPC Assembly Audio Jack is damaged – replace the FPC Assembly Audio Jack.



Problem Areas: Proximity Switch



Check:
Inspect the sensor on the FPC Assembly Audio Jack.
Action:
1. If dirty or clogged – clean it.



2. If damaged – replace the FPC Assembly Audio Jack.
3. Replace Main PBA.



1.20 Pressure Sensor

1.20.1 Pressure Sensor test fails

N/A. No Pressure sensor in the phone.





Problem Areas

1.21 Water Resistance

1.21.1 Water Resistance fails



Check:
Inspect the SIM Cap.
Action:
1. If dirty – clean it.
2. If not properly assembled – disassemble and reassemble.



3. If the SIM Cap is damaged – replace it.

Run the Water Resistance Test again!



Check:
Inspect the SD Cap.
Action:
1. If dirty – clean it.
2. If not properly assembled – disassemble and reassemble.



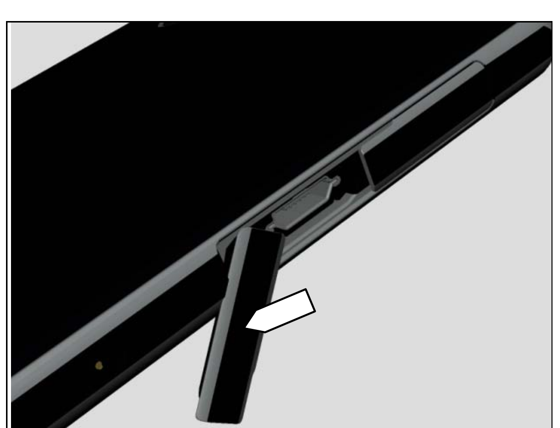
3. If the SD Cap is damaged – replace it.

Run the Water Resistance Test again!



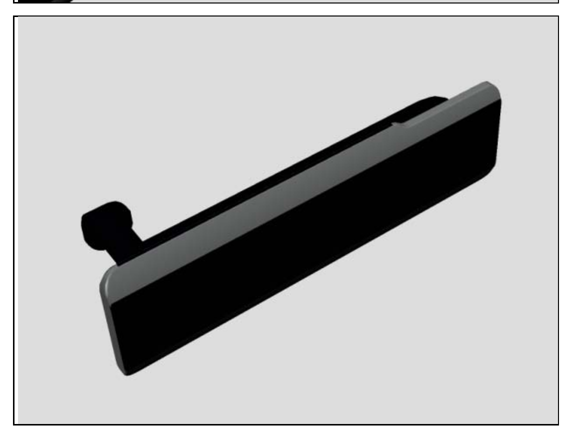
Problem Areas: Water Resistance

Check:
Inspect the USB Cap.
Action:
1. If dirty – clean it.
2. If not properly assembled – disassemble and reassemble.



3. If the USB Cap is damaged – replace it.

Run the Water Resistance Test again!

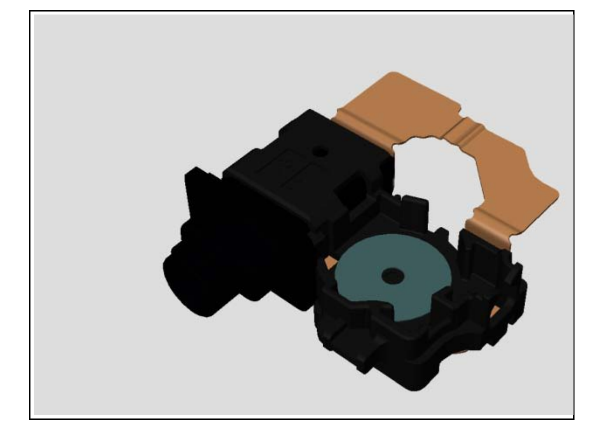


Check:
Inspect the FPC Assembly Audio Jack.
Action:
If not properly assembled – disassemble and reassemble (with new adhesive).



3. If the FPC Assembly Audio Jack is damaged – replace it.

Run the Water Resistance Test again!





Problem Areas: Water Resistance



Check:
Inspect the Ear Speaker
Action:
If damaged – replace the Ear Speaker
Run the Water Resistance Test again!



Check:
Inspect the secondary microphone
Action:
If damaged – replace the Sheet WP 2nd Mic.
Run the Water Resistance Test again!



Check:
Inspect the edge of Front Cover for damage and gap.



Action:
1. If the edge of Front Cover has gap – reassembly it.
2. If the Front Cover is damaged – replace it.



Problem Areas: Water Resistance

Check:
Inspect the edge of Window Back for damage and gap.



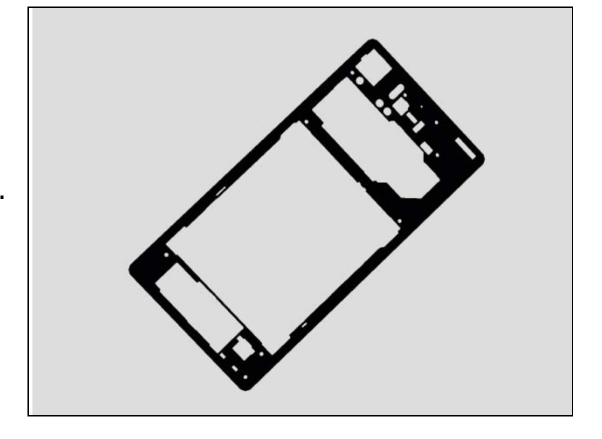
Action:
1. If the edge of Window Back has gap – reassembly it.
2. If damaged – replace it.



Check:
Inspect the edge of Rear Cover Assy for damage and gap.



Action:
1. If the edge of Rear Cover Assy has gap – reassembly it.
2. If damaged – replace it.







1.22 Real Time Clock

1.22.1 Real time clock test fails

Action:
Replace Main PBA.



1.23 Total call time

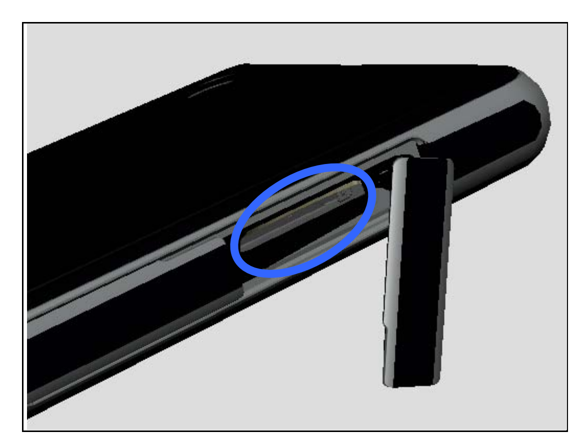
1.23.1 Total call time fails

Action:
Replace Main PBA.

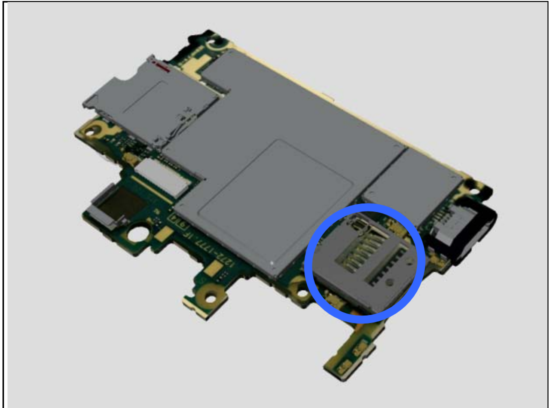


1.24 External

1.24.1 Memory Card not detected



Check:
Inspect that if a memory card is properly inserted.
Action:
If not properly inserted – insert the memory card correctly.



Check:
Inspect the memory card holder on Main PBA.
Action:
1. If dirty or clogged – clean the holder.
2. Replace Main PBA.



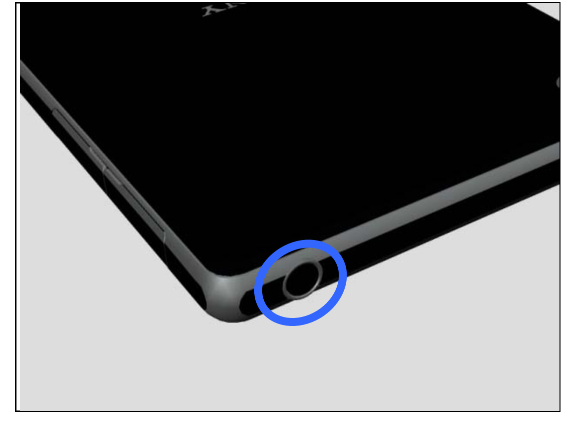
1.25 Security

1.25.1 Security fails

Action:
Replace Main PBA.



1.26 FM Radio

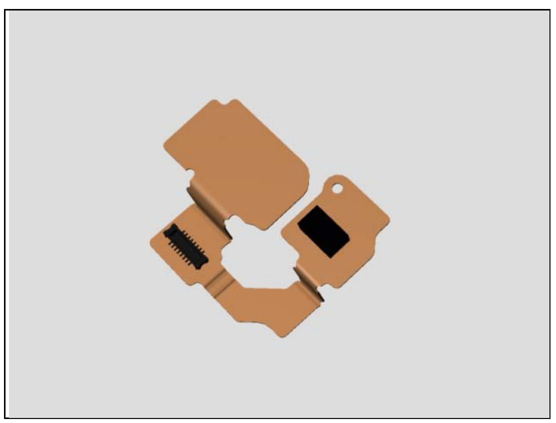


1.26.1 No/Poor FM Radio reception

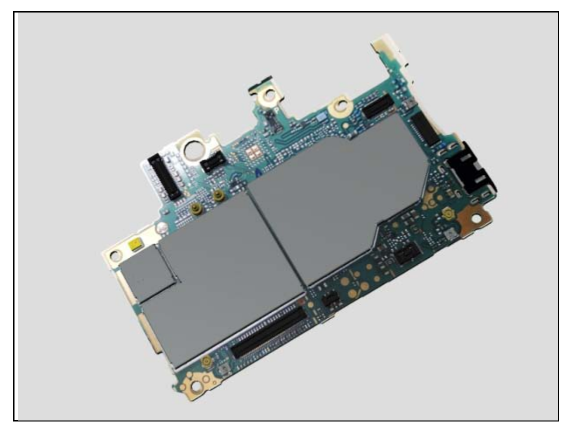
Check:
Inspect the external port of the Audio Jack.
Action:
1. If dirty or oxidized – clean it.



Check:
Inspect the BtB connector of FPC Assembly Audio Jack to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



3. If the BtB connector or FPC of FPC Assembly Audio Jack is damaged – replace the FPC Assembly Audio Jack.



4. Replace Main PBA.

1.27 Battery Health test

1.27.1 Battery Health test fails

N/A.

1.28 Flip Slider Counter

1.28.1 Flip Slider Counter fails

N/A. Not slider phone.

1.29 Verify Certificates

1.29.1 Verify Certificates fails

Action:
N/A.



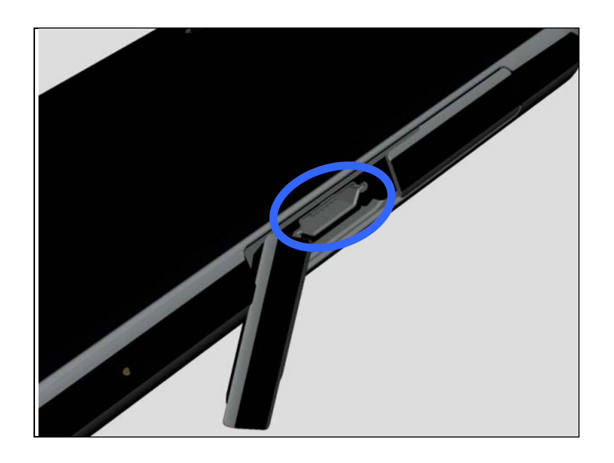
1.30 IrDA Test

1.30.1 IrDA test fails

N/A. No IrDA functionality in the phone.



1.31 TV-Out Test



1.31.1 TV-Out test fails

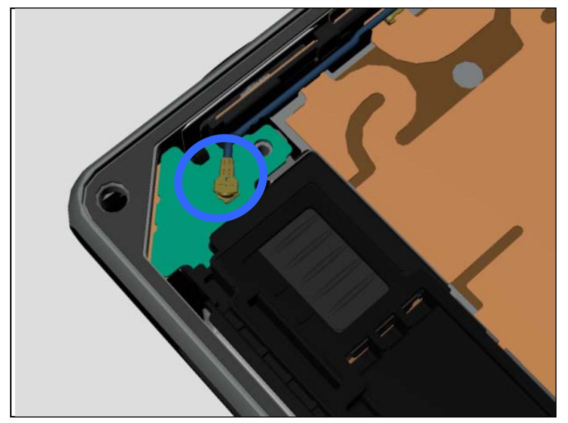
Check:
Inspect the USB connector.
Action:
1. If dirty or oxidized – clean the connector.
2. Replace Main PBA.





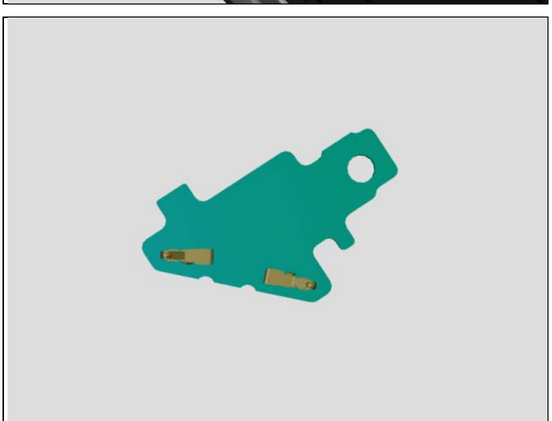
Problem Areas

1.32 Network & Signal

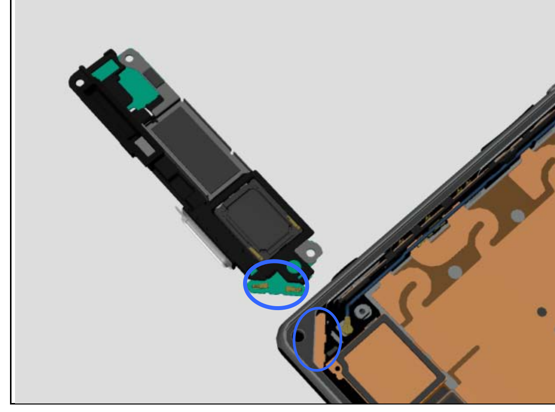


1.32.1 No/Poor signal

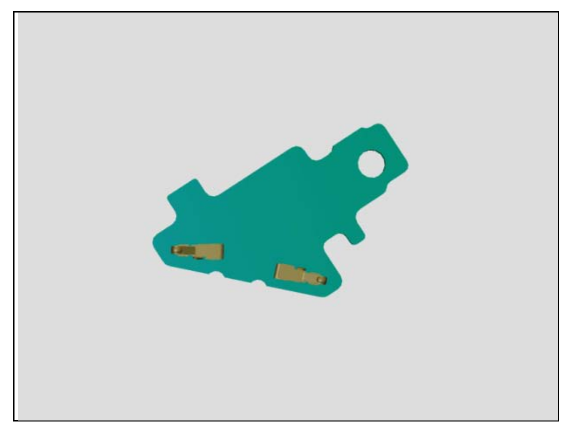
Check:
Inspect the RF connector of RF Cable B to the PBA Cellular Sub.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



Action:
If the RF connector of the PBA Cellular Sub is damaged – replace the PBA Cellular Sub.



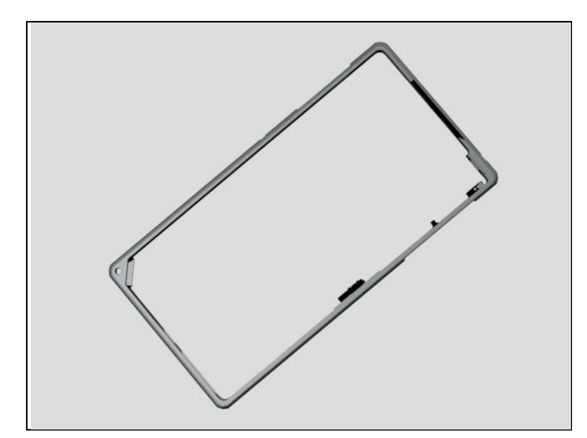
Check:
Inspect the antenna on Main Frame Assy and the contact pins on PBA Cellular Sub.
Action:
1. If dirty or oxidized – clean the antenna and pins.



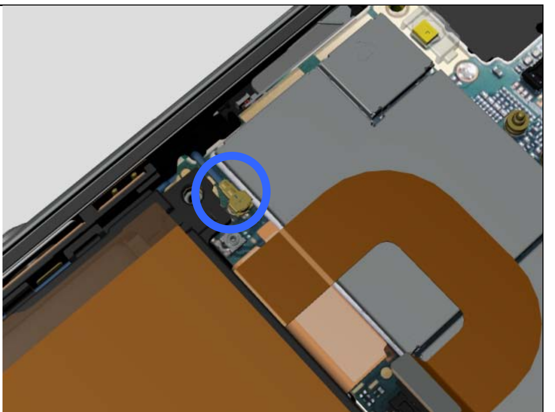
2. If the contact pins are damaged – replace the PBA Cellular Sub.



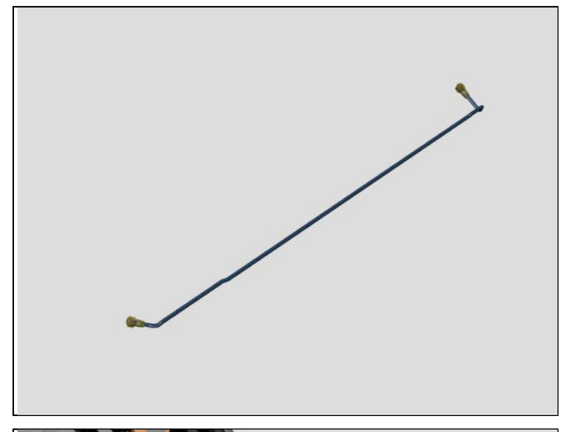
Problem Areas: Network & Signal



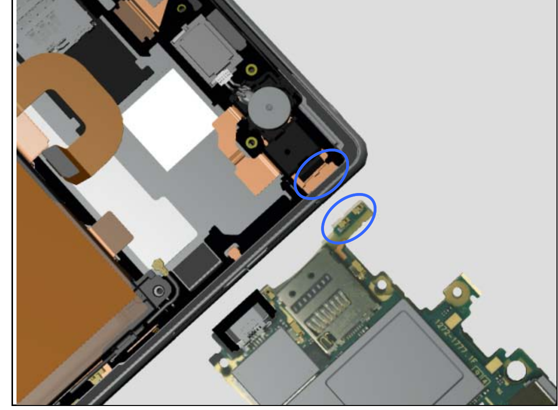
Check:
Replace the Main PBA with a known working one and test the network.
Action:
1. If the network is still not working – replace the Main Frame Assy.



Check:
Inspect the RF connector of RF Cable B to the Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



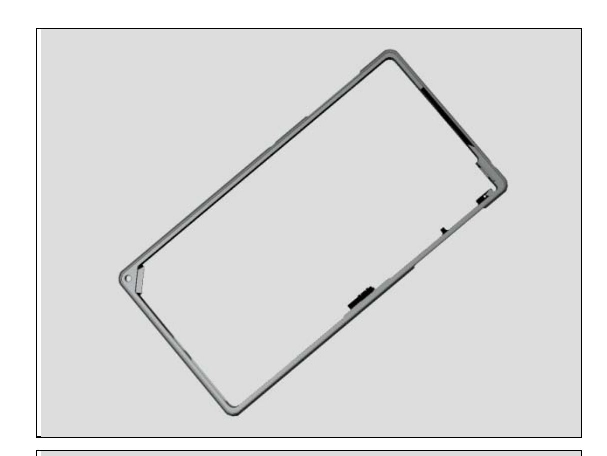
Action:
1. If the RF Cable B is damaged – replace the RF Cable B.



Check:
Inspect the antenna on Main Frame Assy and the contact pins on Main PBA.
Action:
1. If dirty or oxidized – clean the pads and pins.



Problem Areas: Network & Signal



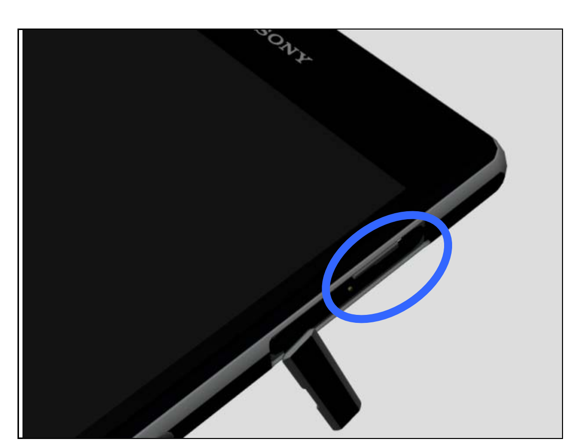
Check:
Replace the Main PBA with a known working one and test the network.
Action:
1. If the network is still not working – replace the Main Frame Assy.

2. Replace the Main PBA.



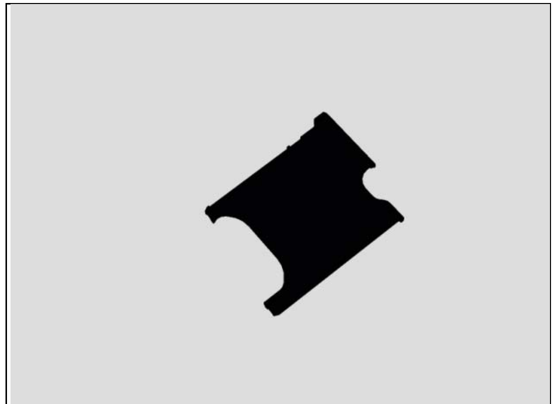
Problem Areas

1.33 SIM

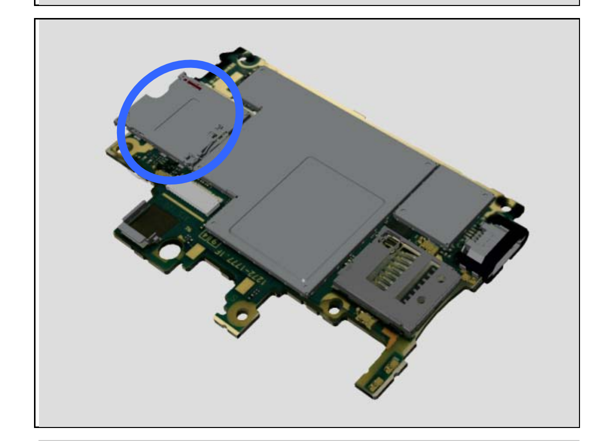


1.33.1 SIM not detected

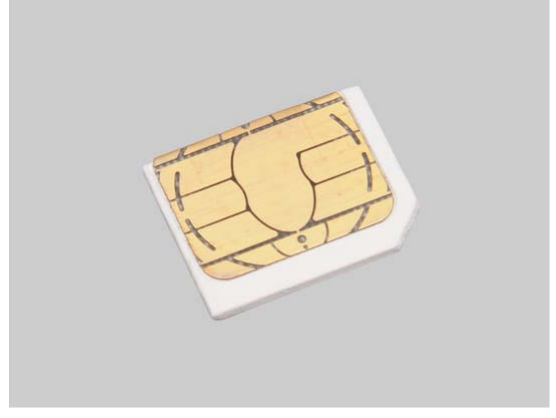
Check:
Inspect the external port of the SIM card holder and check if a SIM card can be properly inserted.
Action:
If dirty or clogged – clean the external port.



Check:
Inspect the SIM Tray.
Action:
1. If the SIM Tray is damaged – Replace it.



Check:
Inspect the SIM card holder on Main PBA.
Action:
1. If dirty or clogged – clean the holder.
2. Replace Main PBA.

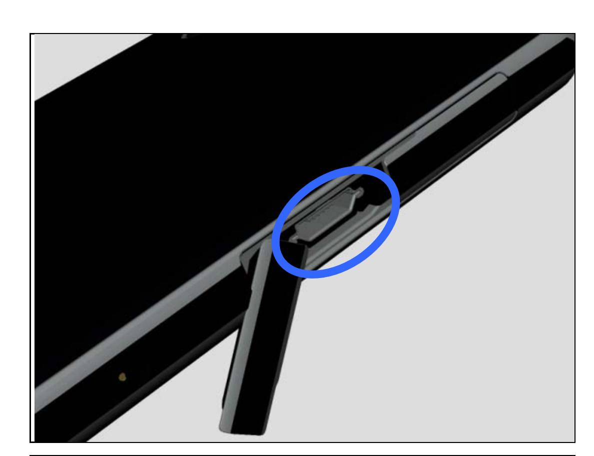


1.33.2 Incorrect UIM or SIM indicated

Check:
Check whether the phone is locked to a particular operator and whether the correct operator UIM or SIM is being used.
Action:
1. Use a proper operator UIM/SIM or test UIM/SIM.
2. Replace Main PBA.

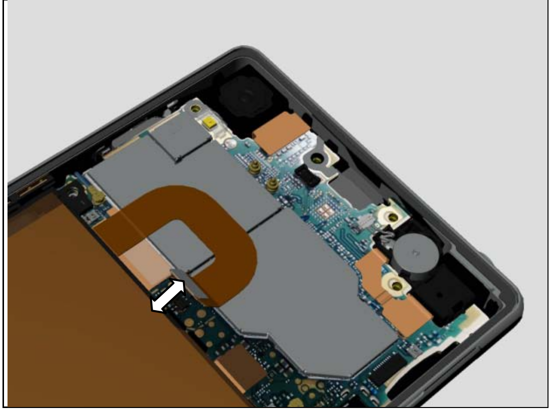


1.34 Charging

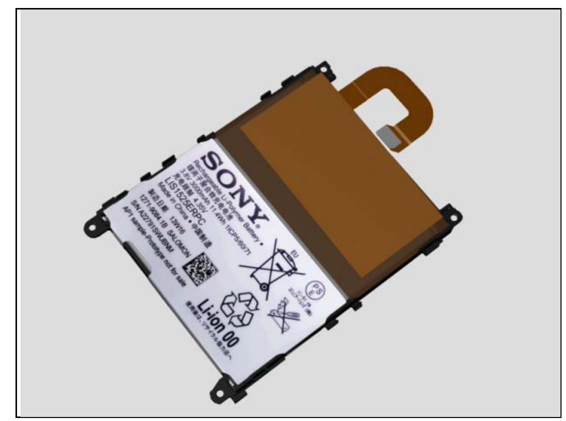


1.34.1 Battery will not charge by USB connector

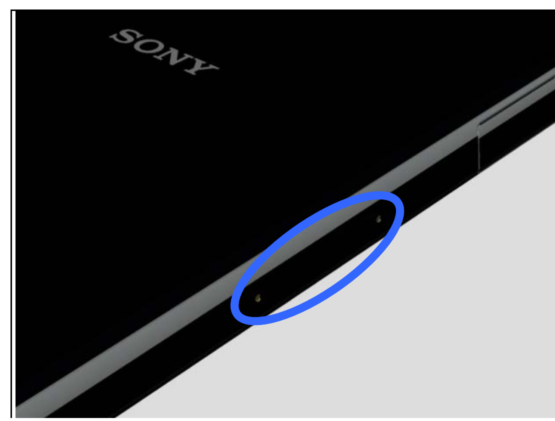
Check:
Inspect the USB connector.
Action:
1. If dirty or oxidized – clean the connector.
2. Replace Main PBA.



Check:
Inspect the BtB Connector of the Battery to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean the both sides of the BtB connector.



3. If the BtB connector, the Battery FPC or Battery is damaged – replace the Battery.
4. Replace Main PBA.

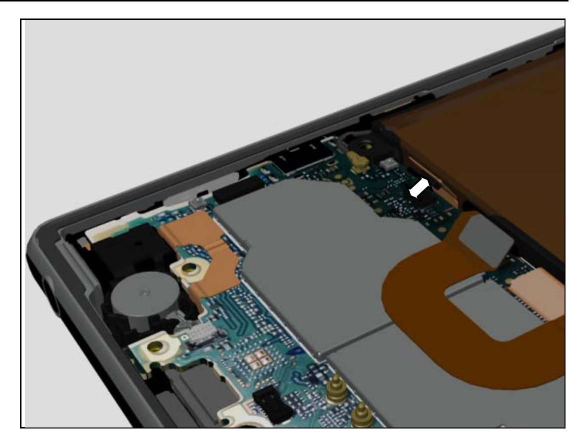


1.34.2 Battery will not charge by charge pad

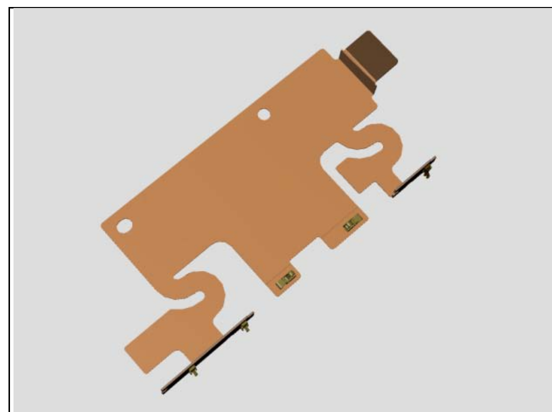
Check:
Inspect the external port of the Magnetic Charger Connector.
Action:
If dirty or oxidized – clean it.



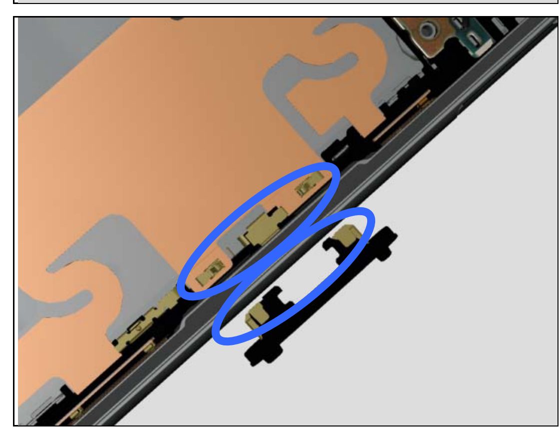
Problem Areas: Charging



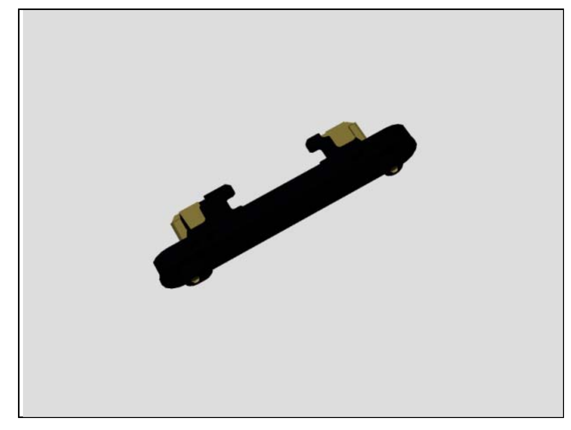
Check:
Inspect the BtB connector of the FPC Assembly Charger to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean the both sides of the BtB connector.



3. If the BtB connector or FPC of the FPC Assembly Charger is damaged – replace the FPC Assembly Charger.



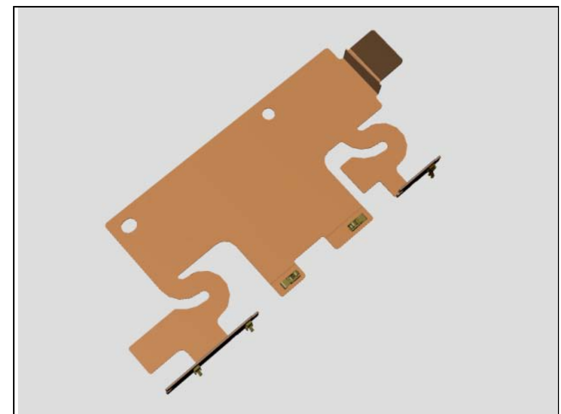
Check:
Inspect the contact pins on FPC Assembly Charger and pads on Magnetic Charger Connector.
Action:
1. If dirty or oxidized – clean the pins and pads.



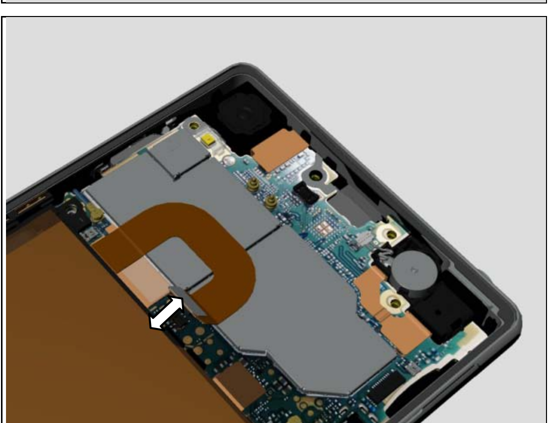
2. If the contact pads of Magnetic charger connector are damaged – replace the Magnetic charger connector.



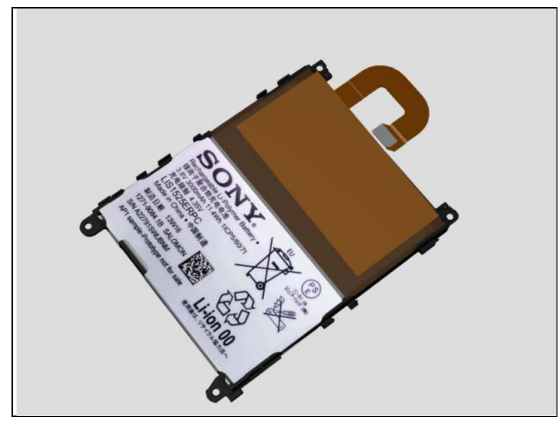
Problem Areas: Charging



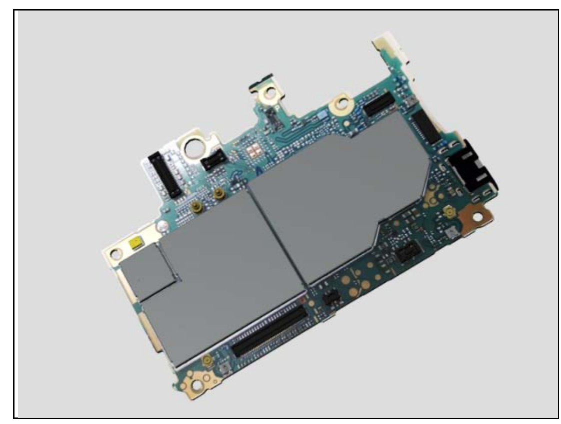
3. If the contact pins of the FPC Assembly Charger are damaged – clean the FPC Assembly Charger.



Check:
Inspect the BtB Connector of the Battery to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean the both sides of the BtB connector.



3. If the BtB connector, the Battery FPC or the Battery is damaged – replace the Battery.



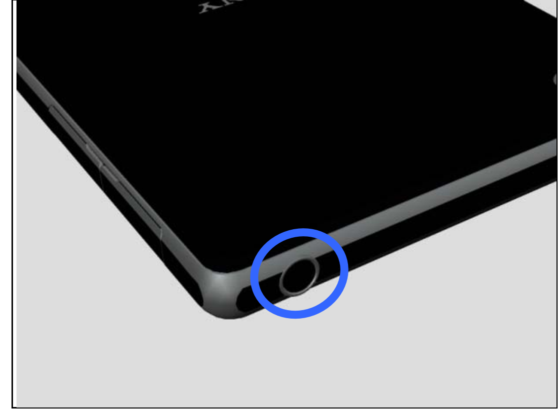
4. Replace Main PBA.



Problem Areas

1.35 HandsFree by Wire

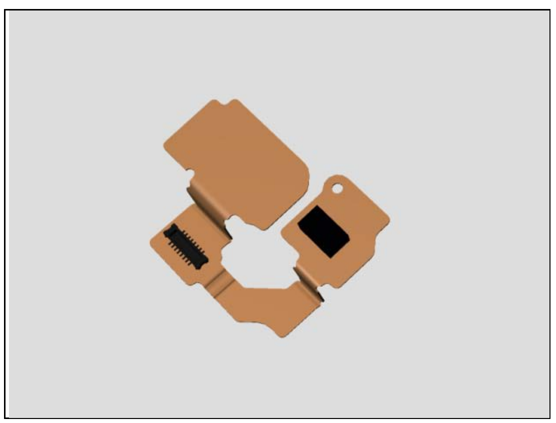
1.35.1 Connection to portable Handsfree fails



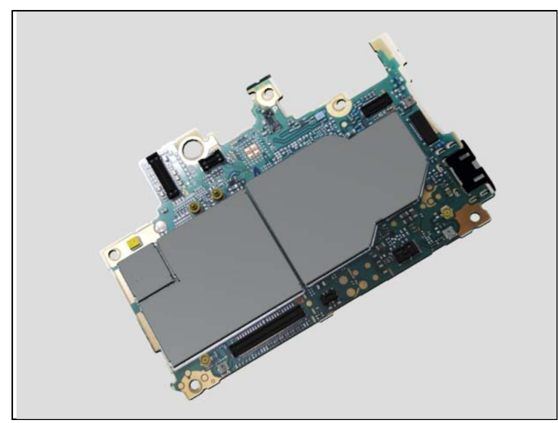
Check:
Inspect the external port of the Audio Jack.
Action:
1. If dirty or oxidized – clean it.



Check:
Inspect the BtB connector of FPC Assembly Audio Jack to Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.
2. If dirty or oxidized – clean it.



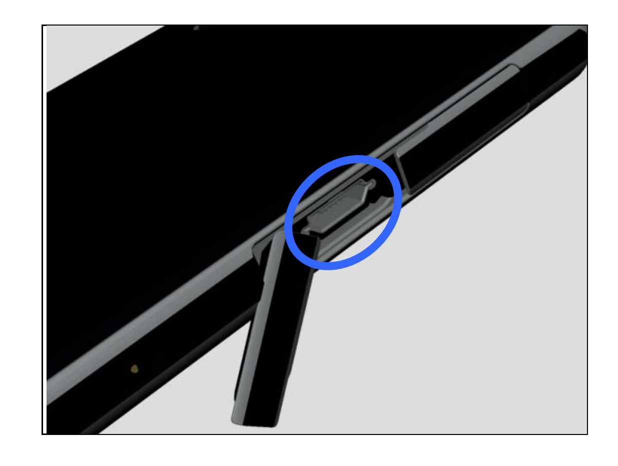
3. If the BtB connector of FPC Assembly Audio Jack or FPC is damaged – replace the FPC Assembly Audio Jack.



4. Replace Main PBA.



1.36 Data Communication



1.36.1 Data transfer via System Connector fails

Check:
Inspect the USB connector.
Action:
1. If dirty or oxidized – clean the connector.
2. Replace Main PBA.



2 Revision History

Rev.	Date	Changes / Comments
1	2013-Sept-05	Initial release
2	2013-Sept-27	Updated WRT Chapter 1.21